

# PROTECTION FOR TRACTOR BRAKES

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"THE TIMES" OF THE TRANSPORT WORLD

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See Page 12

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## Efforts to Avoid London Bus Strike

THE action of Sir John Elliot, chairman of London Transport, in inviting Mr. Cousins and his colleagues on the Transport and General Workers Union to a round-table talk must at least convince Londoners that the Executive at any rate has done its best to avert a bus strike. The fact that the meetings began at 10.30 on Monday morning and lasted until 5.40 p.m. indicates the strength of the endeavour to reach a settlement. On behalf of the L.T.E. Sir John's offer was that, if the 8s. 6d. increase awarded by the Industrial Court to the 36,000 Central London busmen were accepted and the strike called off, the Executive would re-examine in the autumn the wage rates of the other grades, embracing the 5,000 drivers and conductors on the Country services and the 6,300 semi-skilled and unskilled maintenance staff in garages, to whom no award was made by the Court. He also offered to consider the rates of 720 Green Line coach drivers before the autumn. The autumn review would include a joint examination of means of securing further economies in operation and maintenance. This offer the union representatives rejected, but they made a counter-proposal that the £1 million which the 8s. 6d. increase was estimated to cost should be spread over all grades of the staff, implying an all-round increase of about 6s. 6d., and that the pay of all should be reviewed in the autumn. This the Executive was unable to accept for two reasons: it would have disregarded the terms of the Industrial Court award and, in Sir John's words, would have started the whole leap-frogging business all over again, because the provincial busmen would have demanded similar treatment. Mr. Cousins then appealed to the Minister of Labour, but as Mr. Macleod had already stated that it was against government policy to interfere with an award of the Industrial Court, intervention on the proposed lines was not possible.

## Executive and the Public

ACCEPTANCE by the L.T.E. of the union's proposal would not only have encouraged further leap-frogging of the London and country and provincial busmen, but would have had still wider implications, for increases to the London maintenance staff would immediately have set the pattern for the skilled engineers in the L.T.E. workshops, as well as those in railway workshops and in outside industry. Demands for higher wages have just been submitted on behalf of 77,000 municipal busmen and 100,000 in the employ of the provincial bus companies. At a Press conference Sir John Elliot said he viewed with great grief the breakdown of the conference. "It is going to mean a great deal of hardship," he said, "to people who in my opinion ought not to have to put up with it—that is the public." With the agreement of his colleagues he had felt it would be wrong to slide helplessly into the upheaval without making another attempt to bring both sides face to face and to tell the union the facts of life once again—about the decline in the bus business and that a strike at this time would be grievous to the public, as well as to the Executive and its employees. He had pointed out to the union leaders that they were not a profit-making concern but a form of socialism, of public ownership. He thought it a disservice to a state-owned business to put the public to this inconvenience. He was sure that the vast majority of busmen in the London garages viewed the situation with the gravest disquiet and did not want to strike.

## Problems of the Tramp

THE Baltic Exchange was the venue for this year's Institute of Transport shipping lecture: it was delivered by Mr. C. F. B. Arthur, a director of the Bolton Steam Shipping Co., Limited, and its subject "Operation of Tramp Shipping." Having described its significance the author pointed out that the industry was now passing through a period of acute depression. Some months ago the tramp owner was riding confidently on the surge of high freight rates and could anticipate profits on the scale of £200 or more per ship per day. His one lament

was that the basis of taxation in this country made it difficult for him to replace his ageing tonnage with new vessels—a 10,000-ton dead-weight ship could be built in 1939 for less than £200,000; today's cost would be at least £800,000. The war in Korea had created an abnormal demand for tonnage, resulting in very high freight rates. With more settled conditions these rates fell considerably but later rose again with the frantic competition for American coal imports. Then came the Suez crisis, which, among other things, involved the major nations in programmes of extensive commodity stockpiling. Heavy stock-piling, together with the reduction in coal imports due to two successive mild

problems it posed, occupied the society's major attention. There was little evidence, he said, in the 1958 Budget proposals that the Government was as enlightened on the need for preparation as it was on the conception of the area itself.

## New York in London

LAST week the opening of a London office by the Port of New York Authority was marked by a London luncheon presided over by Mr. Donald V. Lowe, chairman of the Authority. Mr. Harold Watkinson, Minister of Transport, and Lord Mills, Minister of Power, were principal

## CURRENT TOPICS

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winters, had reduced the demand for tramp shipments to an alarming degree, and today hundreds of ships were laid up in this and the principal maritime countries. On the all-important subject of flags of convenience Mr. Arthur pointed out that the tonnage flow trading under these flags was more than 14½ million gross. This country, he said, could not allow the position to develop under which the available trading tonnage of the world could be dominated and dictated to by a bloc of shipowners owing no allegiance to any recognised maritime nation.

## Record Motor Industry Results

COMMERCIAL vehicle manufacturers achieved record results in the three months ended March 31 by exporting nearly £25 million worth of buses, lorries and vans, amounting to 36,000 units, contributing to overall record export figures for the period of nearly £75 million for all motor vehicles, £15 million for agricultural tractors and £130 million for all motor industry products. Announcing these figures last week and the fact that in March, monthly motor car output exceeded 100,000 for the first time and commercial vehicle output was 33,000, Mr. Stanley Clark, chief executive of the Society of Motor Manufacturers and Traders, said that substantial as the results were, they were not nearly as good as they might be if the deadening clog of purchase tax was lifted. Comparing the small turnover tax in Western Germany with the 60 per cent purchase tax on cars and 30 per cent on goods vehicle chassis in this country, Mr. Clark said this put us at an absurd disadvantage when it came to quantity production. There were already signs that we were not making sufficient headway in the all-important markets of Western Europe. This our manufacturers could do but for the purchase tax restriction on production. Mr. A. S. Dick, president of the S.M.M.T., addressing the annual general meeting of the society, also referred to the great potential of the European market. The prospect of a European Free Trade Area, with all its opportunities and the

guests with Mr. Robert B. Meyner, Governor of the State of New Jersey. Mr. Lowe stressed the close ties and similarities between Britain and the United States and also that his Authority, founded in 1921, was moulded in the pattern of the Port of London Authority. London played a principal role in the worlds of commerce and finance and they therefore felt it a most suitable location for the new office; some 40 per cent of Anglo-U.S. trade went through the Port of New York. Governor Meyner said the port was not only vital to the people immediately surrounding it in the two states, but to the inhabitants of all the world, because we survived only so long as products passed between our ports. It was unrealistic to ignore trade endeavours by Communist nations. Our foreign trade and investment policies could tip the scale and we should expedite the passage of people and goods between nations. He paid a tribute to the expansion of British production between 1938 and 1956 and to the wide spread of the sterling area. Mr. Harold Watkinson welcomed the closer ties represented by the new development. All forms of transport made the world smaller and the meeting of peoples and development of personal contact was of the greatest importance. In 1937 about 300,000 people crossed the Atlantic between Britain, U.S. and Canada; in 1957 750,000 did so, half by air. We believed the free world could expand quicker than the Communist and we were confident we should soon see an upswing in our economy. To beat inflation was essential to our task of maintaining the pound sterling and the Government was determined to go ahead with measures to that end. It would conduce to the expansion of trade and he congratulated the P.N.Y.A. upon the foresight shown in opening the new office.

## Road Research Laboratory Open Days

VISITORS from industry, universities, local authorities and government departments will be able to see some of the activities and achievements of the Road Research Laboratory, Department of

Scientific and Industrial Research, on May 15 and 16 next, when both the materials and construction division (including the colonial section), at Harmondsworth, and the traffic and safety division, at Langley, will be holding their first open days since 1955. Among the new research tools on view will be a portable skid-resistance tester and an automatic weighing device. The skid-resistance tester is a lightweight instrument that can be set up conveniently on any road where the surface has to be checked. It indicates the types of surfaces likely to become slippery when wet and permits accurate assessment of the susceptibility of different aggregates to polishing by traffic. The automatic weighing device can be set into a road to measure and record the number and weight of wheels passing over it. Exhibits will also include several standard types of safety belts and harness for drivers and passengers and, at Harmondsworth, which is chiefly concerned with the techniques of road construction, examples of research into soil stabilisation. Not all the exhibits are of a technical nature, for at Langley visitors will see a number of varieties of young shrubs growing in the grounds, which have been planted to provide information on their protective value against crash impact on road verges and the most suitable varieties for planting between dual carriageways as protection against headlight dazzle.

## There is Nothing to Fear

THE last informal luncheon in the Institute of Transport's current session took place in London on Tuesday of this week when Mr. David Renton, Parliamentary Secretary to the Home Office, was the speaker. In the absence in Africa of the president, Sir Reginald Wilson, the chair was taken by Sir John Elliot, past-president, who apologised for doing so at a time when many people had seen and heard more of him than they wished—a neat reference to the threatened London bus strike. Mr. Renton said that his connections with transport were not as close as they had been when he was chairman of the Conservative Party Transport Committee, but, nonetheless, both in his two years at the Ministry of (Fuel and) Power and in his present post at the Home Office, he did still find connections with transport that gladdened him, just as the present occasion had allowed him to renew so many acquaintances. Before he had accepted office he had suggested that there might well be a case for increasing ministerial responsibility for nationalised undertakings and also for establishing select committees to review the operation of such. To some extent this had come about and there was now a select committee appointed to review their reports and accounts. It was not, however, moving very fast and he thought that the British Transport Commission had nothing to fear!

## New Roads for Old

SUSPECT as pressure groups are in this country, it must be granted that a good deal of reform of great public importance would never be accomplished without the focus they give to public opinion and the stimulus they offer governments. The Roads Campaign Council deserves gratitude for having again staged at Charing Cross Underground Station an exhibition—"New Roads for Old"—which illustrates graphically the need for capital works on British roads, the progress already made and what has been accomplished long ago by other countries. Opened by Lord Brabazon of Tara, it will remain on view until May 17. He pointed out that there is a desperate need to tackle the traffic problem in our large towns and cities while the average speed in Central London is only 10 m.p.h. and in Central Glasgow only 7. "Manchester's rush-hour traffic travels at the unrelenting speed of 5.9 m.p.h." The answer to "we can't afford it" was that we could not afford not to provide facilities for the motor vehicle. Dr. W. A. Glanville, Director of the Road Research Laboratory, had said that inadequate roads were costing nearly £500 million a year through delays to trade and industry.





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The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate, its object being to encourage the provision of all forms of transport in the best interests of the community.

We desire to call the attention of our readers to the fact that Russell Court, 3-16 Woburn Place, London, W.C.1, is our sole London address, and that no connection exists between this newspaper and any other publications bearing somewhat similar titles.

### Consultative Committees and Railway Economies

AS representatives of user interests the transport consultative committees are doing good work, and while fully seized with their responsibilities qua the user they are also not unmindful of the problems of the providers. That their views are tempered by reason and guided by justice is apparent in the recently published annual reports of the Central Transport Consultative Committee for Great Britain and the two users' consultative committees which report direct to the Minister of Transport—one for Scotland and the other for Wales and Monmouthshire. Much of the work of these and the area committees was concerned with consideration of the proposed closing of stations and branch lines. It is recorded that during 1957 the committees supported proposals for the closure or partial closure of 10 branch railways and the closing, in addition, of 60 stations. Minimum annual savings effected in 1957 in the closing of branch lines and withdrawal of services are estimated at £137,767, bringing the total of such savings since 1950 to £1,677,121, as shown in the table. The central committee points out that

BRANCH LINE CLOSURES SUPPORTED BY AREA CONSULTATIVE COMMITTEES UP TO DECEMBER 31, 1957

Committee	Route mileage from which service withdrawn:			Estimated annual savings
	Number of branches	Passenger only	Freight and freight	
Scotland	40	356½	83½	51
Wales and Monmouthshire	18	91½	32½	30½
East Anglia	10	97½	15½	25
East Midlands	15	211	22	7
London	6	13½	2½	3½
North Eastern	9	161½	24½	15
North Western	18	123½	17½	14½
South Eastern	16	59½	33½	80½
South Western	6	23½	3½	20
West Midlands	9	39½	11½	18½
Yorkshire	8	111½	6	—
TOTAL	155	1,288½	251½	232½

in some cases local authorities and individual members of the public have alleged lack of frankness on the part of the Commission about the submission of figures supporting the case for withdrawing a service or closing a line. The Commission has naturally been reluctant in this respect on the ground that the committees, to whom all relevant information is in fact supplied, sufficiently represent and guard the public interest.

### Public versus Self Interest

THIS feeling of public distrust is regarded as partly due to lack of appreciation of the fact that the committees are there to represent the public: they are not arbitrators but consultants. What is very much of interest to an individual or one section of the public may be against the interests of the public as a whole; "we must have regard to the effect which any wasteful excess of transport has upon the general level of charges, and therefore on the cost of living, and make a realistic appraisal of the situation in the light of the public need," states the report. If the committees have resisted the closure of only a few lines or services it is because the evidence "has been in nearly every case so overwhelming that no other course was possible." To make the public more aware of the existence and functions of the consultative committees, and to prevent allegations in Parliament and the

### MODERN TRANSPORT MAY 3, 1958

Press "which show that our activities are misunderstood," a small explanatory handbook is being prepared for issue in appropriate cases. The experience of the consultative committee for Wales and Monmouthshire is that such cases "are generally watertight and offer very few grounds upon which the Commission's plans can be resisted" and that it will probably be some time before the stage is reached when the Commission has only marginal cases left to submit. States this committee:

"On the question of unremunerative services the Committee continue to hear arguments which reveal either ignorance of or disagreement with the Commission's policy and the provisions of the Transport Acts. There seems to be a complete lack of appreciation of the provision that the Commission is required to pay its way and that the elimination of a railway services which are unremunerative is a publicly declared policy which has been approved by successive Governments. Objectors invariably find it difficult to recognise that, in a nationalised industry, losses being sustained by their own lines and services should not necessarily be absorbed by the remainder of the railway system."

### A Warning

IN a reference to the Commission's determination to concentrate in the first instance on alternative methods of operation and to substitute diesel rail cars and light trains for uneconomic steam trains where substantial improvements in revenue would result, the central committee points out that during 1957 few steam trains were in fact taken out of service; the heavy losses in operation of the slow steam services, therefore, in the main continued unchecked. Instances are given, however, where progress has been made, the general emphasis being "on improving services rather than withdrawing them wherever improvements show the slightest prospect of proving reasonably remunerative" and "the Commission's reluctance to take the distasteful step of curtailing facilities is being effectively demonstrated." This report goes on to state: "We are concerned in case the possible scaling down of expenditure, as a result of present financial stringency, may result in the reduction in the supply of lightweight diesel cars and trains, and a continuing financial drain upon the resources of the Commission through the operation of obsolete steam services. We hope that whatever other projects may have to be postponed by the Commission, the provision of diesel trains in substitution for these steam services will be pressed on as quickly as possible."

### The Government View

ALL this lends weight to the economy proposals which Sir Brian Robertson, the B.T.C. chairman, sent to the Ministry of Transport last week and which he is reported to have explained point by point to the Minister last Monday. The Government's attitude to these proposals will decide whether any solution can be found for the deadlock over railway wages. It will be recalled that when members of the Commission and the union leaders together met Ministers at 10 Downing Street on April 22 the Prime Minister pointed out that the surest road to greater efficiency and productivity was the modernisation programme and "a more intense programme for pruning the railway services by reducing or cutting out uneconomic services." Provided that the Commission and the unions would effect maximum economy in operation and would join in ensuring the most efficient use of manpower, the Government "was prepared to re-examine at once the programme of modernisation and to give any necessary support to the reductions in uneconomic services as well as to consider other points put forward by the chairman of the Commission." If this means an intensified drive towards the closing of unremunerative stations and branch lines and towards the substitution of diesel for steam traction, the Commission can no doubt rely upon the active and sympathetic assistance of the consultative committees. It may indeed imply concentration on certain aspects of the modernisation plan and the temporary shelving of other and less urgent schemes of development.

### Forthcoming Events

- May 2.—Railway Club. Paper by Mr. H. A. Vallance, "London to Inverness by Day." At Royal Scottish Corporation, Fetter Lane, E.C.4. 7 p.m.
- May 3.—Railway Development Association. Meeting addressed by Messrs. Robert Aickman and O. H. Prosser. At St. Bride's Institute, near Ludgate Circus, E.C.4. 3 p.m.
- May 4.—Permanent Way Institution (London). Joint visit with Edinburgh section to Edinburgh.
- May 5.—Traders Road Transport Association. Annual dinner. Grosvenor House, Park Lane, W.1.
- May 7.—Institute of Petroleum. Paper by Mr. W. J. Newby, "Recent Developments in Refining." At 61 New Cavendish Street, London, W.1. 5.30 p.m.
- May 7.—Electric Railway Society. Short papers. At 153 Drummond Street, N.W.1. 7.15 p.m.
- May 7-17.—Mechanical Handling Exhibition and Materials Handling Convention. At Earls Court.
- May 9.—Institute of Road Transport Engineers (South Wales). Paper by a speaker from British Oxygen Gases, Limited. At South Wales Institute of Engineers, Park Place, Cardiff. 7 p.m.
- May 9-11.—Permanent Way Institution (London). Visit to Essen at the invitation of Verband Deutscher Eisenbahn-Ingenieure e.V.
- May 13-15.—Public Transport Association. Annual conference. At Harrogate.
- June 3-6.—Institute of Transport. Congress. In Dublin.
- September 1-7.—Society of British Aircraft Constructors. Flying display and exhibition. At Farnborough. (Public days September 5, 6 and 7.)
- September 26-October 4.—Commercial Motor Transport Exhibition. At Earls Court.

## NEXT-DAY DELIVERY BY EXPORT EXPRESS SERVICE TO LONDON DOCKS

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## TRAMWAY OPERATION CEASING IN ABERDEEN

*Details of Changeover to All-Bus City*

### IMPROVEMENTS TO CENTRAL DEPOT

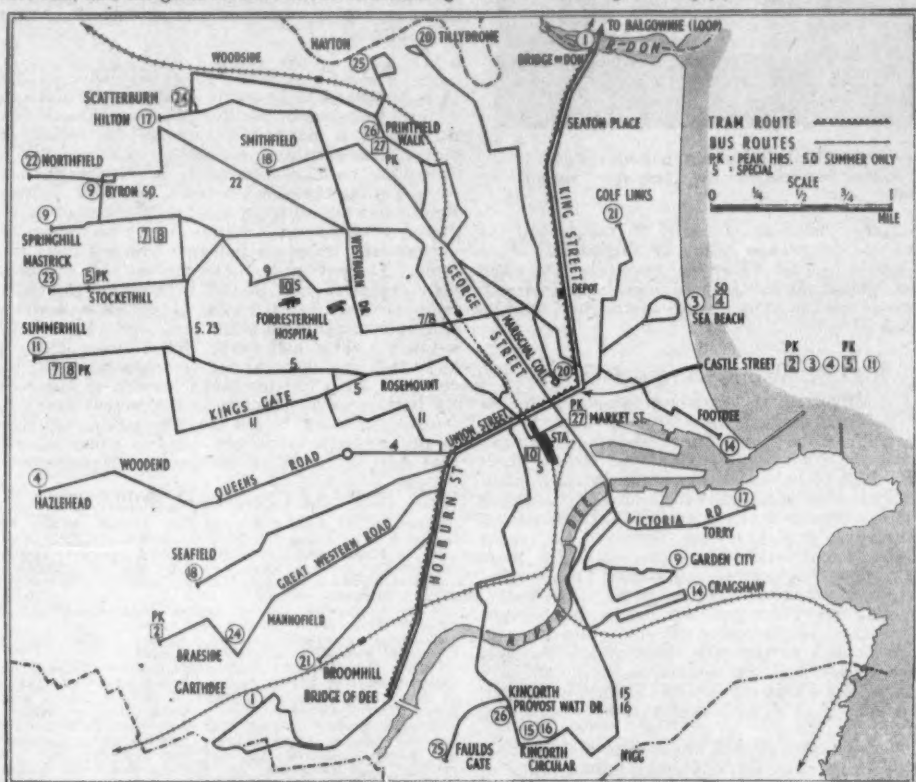
TRAMWAYS, which have been operated in the City of Aberdeen since 1874 and for the last 58 years under the auspices of the corporation, will be abandoned on May 3. From May 4 a fleet of 66-seat buses will be operated over the last remaining tram route, which will be extended at either end into housing estates at present served by shuttle bus services. The process of abandonment began before the war with the short Torry and Duthie Park routes over congested streets; the last previous stage was the abandonment on November 17, 1956, of the Woodend tram service and its replacement by buses on the following day.

In the year ended May 31, 1957, just over 100 million passengers were carried, 8 million miles were run, and the gross revenue of the undertaking

on the northern fringe of the housing development in Aberdeen proper; there most of the service will terminate. The throughout service at present is operated by 17 trams and four buses, but the new through service with a 3-min. peak-hour headway over the bulk of the route (i.e. five vehicles an hour more than at present) will be covered by 20 66-seat double-deck buses. The 8-ft. wide vehicles which will be used are on A.E.C. chassis with Monocontrol operation and the 15 vehicles which were being delivered during April have Metropolitan-Cammell-Weymann bodywork. There are five similar vehicles already in service, one of which was on view at the 1957 Scottish Motor Show, with Park Royal bodies.

### Remaining Cars

The tramcars remaining in operation comprise 22 double-bogie units with centre entrances and twin staircases providing 74 seats. These were all



Aberdeen Corporation bus services, May, 1958; the tram route now abandoned is also shown

was £1,140,393. Of this £167,557 was contributed by the remaining trams, which incurred a net deficit of £54,159. The motor bus undertaking had a small surplus of £84,447. With the exception of the years between 1947 and 1952, however, the tram system has been solvent over a long period, as indeed has the bus undertaking.

### Statistical

The average fare charged on the Aberdeen trams of 1.745d. per mile is slightly above the average bus fare of 1.467d. The working expenses per car-mile of trams have been 41.238d. and the total revenue 42.606d.; corresponding figures of the buses are 28.319d. and 33.009d. The trams have taken

built since 1940 (two in that year along with two 64-seat four-wheelers, the remainder after the war) and so have not come to the end of their useful life, but owing to the decline of the tramway industry in this country there is no other place where they are required. The overhead charges on the remaining tram route have become disproportionately heavy and track repair has cost the city engineer's department over £20,000 a year.

Until five years ago, the large bogie cars required two conductors, one for each deck; this was avoided by providing pneumatic door operating equipment so that supervision of loading and unloading became less onerous. The bogie cars are low built and unless the permanent way was kept in first-



Scenes on the Aberdeen system: bus and tram interchange at Bridge of Dee, with Daimler bus about to leave for Garthdee housing estate; English Electric bogie car at Bridge of Dee; below, one-man bus for Balgownie estate turning at Bridge of Don (both these bus services will be incorporated in the tramway replacement service); right, A.E.C. bus intended for tramway substitution turning from Union Street to run to Mastrick

as much as 45d. per mile as against the average of 33d. for the whole city. The average number of buses in daily service was 180 during 1956-57 and the corresponding figure for the trams 20. The population served numbers 186,700 and the average number of journeys per head on local transport is 540 a year.

As already mentioned the main tram service between Bridge of Don and Bridge of Dee, 4.09 miles in length, which is now to be converted, has been extended at the south end by a double-deck bus route operating from Bridge of Dee into the Garthdee housing estate and has had connections at the northern terminus with one-man buses running from Bridge of Don by a loop through the Balgownie area. The replacement bus service will run from the Balgownie loop right through the city and make a loop through Garthdee, giving greatly improved facilities there, but there will be intermediate short workings and at the northern end a hard standing will be provided at Seaton

class order the trucks fouled the granite sett paving. Although attractive in appearance, their current consumption was high and during the snows of the recent winter it was found the wet snow compacted into ice on the lifeguards while salt from the street surfaces was splashed on to the resistances and in the end the service had to be maintained by older four-wheel cars, of which the Corporation had fortunately retained 19 in stock.

### Traffic Improvements

A visit to the City of Aberdeen after a lapse of some years showed the remarkable change for the better made by the removal of the trams from St. Nicholas Street. This was formerly the dead-end terminus for the Woodside line and the cars not only caused great congestion but evidently deterred shoppers. Today, St. Nicholas Street is developing into a first-class shopping centre in its own right because the substitute buses go on into Union (Continued on page 6)

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## LORRY—BUS—COACH

## No Unloading Bans—Yet

HAVING studied the report of the public inquiry held by the London and Home Counties Traffic Advisory Committee, presided over by Mr. Alex Samuels, into proposals for a ban on loading and unloading during morning peak hours at 23 sites in London, the Minister of Transport has accepted its recommendation that there should not be a ban on these sites at present. The report said there should be no ban until the effect of extending normal "No Waiting" restrictions to cover the morning peak period was known. Restrictions may eventually be desirable, it thinks, and recommends that any further proposals should be based on a more detailed comparative study of all factors affecting traffic congestion at the sites concerned. The Advisory Committee is itself undertaking this study, and the Minister says he will consider the long-term issue in the light of its further report. Comment by the Traders Road Transport Association was that the decision would be greeted with relief by shopkeepers, shoppers and vehicle operators. The Association would do all it could to assist in the new long-term study.

## Ferry Terminal Moving to Ardrrossan

TO secure improved loading facilities, Northern Ireland Trailers, Limited, operating a container and trailer ship service between Larne and Troon, Ayrshire, is shortly to transfer its Scottish terminus to Ardrrossan. This service between Troon and Larne commenced about 18 months ago, the service being then once weekly. As traffic increased this was raised to twice weekly and then to a daily run. The two ships, one British, one Dutch, which operate the service can carry 25 containers each.

## Coach Service Development

A MOST entertaining paper on the development of the motor coach industry, from the B.M.M.O. Birmingham—Weston and Birmingham—Llandudno services of the summer of 1921 and the Greyhound London—Bristol daily service of February, 1925, with earlier essays at providing a public service, was given to the Omnibus Society on April 28 by Mr. C. H. Preece, traffic manager, Royal Blue Express Services. In particular he emphasised the value of coach routes in cross-country transport; for the greater part of the year most of the passengers were making intermediate journeys such as Staines—Winchester or Bridport—Exeter as part of some longer journey not easily achieved by other means of public transport.

## Continental Haulage Permits Condemned

FREE trade in Western Europe must include provision for the free international transit of road haulage traffic and the present system of permits for each individual consignment should be abolished. This is one of the recommendations put forward in a report, *Free Trade in Western Europe*, by representatives from industrial federations and employers' organisations of Austria, Denmark, Norway, Sweden, Switzerland and the United Kingdom. The British representatives were from the Federation of British Industries and the British Employers' Confederation. An improved system

of transport is of fundamental importance to the development of the area and this can only be obtained if traders have freedom of choice between types of transport and transport operators, the report adds.

## Southdown Coaches to U.S.S.R.

DURING June—September this year Southdown Motor Services, Limited, is to operate vehicles to the U.S.S.R. from London. This is to be an 18-day tour, the first starting from Victoria on June 27, going by way of Dover, Ostend, Hanover, Berlin, Warsaw, Minsk and Smolensk to Moscow, where tourists stay five days. The return journey is by way of Minsk, Warsaw, Wroclaw, Prague,



Timpson 41-seater coach on A.E.C. Reliance chassis with Duple Donnington body; right a converted A.E.C. Regal of Maidstone and District Motor Services for the Hastings "round the town" tour

Frankfurt and Ostend. Couriers and interpreter-guides will accompany the tour throughout Poland and Russia. The inclusive cost is 100 guineas and the organiser is L. W. Morland and Co., Limited, London shipping brokers. The coach used will be a Leyland Tiger Cub 35-seater.

## Fuel Tanker Delivery Ticket System

DELIVERY of fuel oil in measured quantities is offered by Burnett and Hallamshire Fuel, Limited, large Sheffield coal and fuel oil distributors, using a Leyland Comet tanker. Delivery is complete with a ticket showing the amount delivered. The equipment was designed by Commander H. G. K. Bramah, of Burnett and Hallamshire, in conjunction with the tank manufacturer, Andrews Bros. (Bristol), Limited. Fuel oil from the 1,500 gallon tank can be delivered, at up to 80 g.p.m., in three different ways. When the tanker cannot reach the storage tank, use is made of an 80 ft. long reel of hose carried in a rear compartment. Two 15-ft. lengths of hose are also carried inside tubes along each side of the vehicle. Delivery can also be made by pump through twin cocks at the rear underneath the hose compartment doors, and through an offside rear cock by gravity. A nearside rear cock can also be used to reverse the flow of fuel oil by means of the pump. The rear hose compartment houses a Wayne Flowmeter and ticket printer, which records the fuel

delivered. This figure is recorded on an automatically printed ticket, one copy of which is given to the customer as a form of receipt, the other being retained by the driver as a record of deliveries completed.

## Paper Mills Prefer Road

SUPPORTED by customer preference, Mr. David Yule, a Dyce (Aberdeen) haulage contractor has been granted a licence by the Scottish area Licensing Authority at Aberdeen to carry board and paper goods to Glasgow, Edinburgh, the Scottish midlands and the North of England. The application was opposed by British Railways, who contended that the railways had ample facilities for the carriage of all grades of paper products in the Aberdeen area. Mr. James H. Wilson, of C. Davidson and Sons, Limited, papermakers, said that they would give preference to road transport over rail for the carriage of their products as long as there was a haulage contractor available in the area. In the case of waste paper and special white-line board, the products would not stand up to

functional group visited the Ford and Dennis works; as a result, Ford has promised to display a prototype of an "ideal parcels vehicle" at the Commercial Motor Transport Exhibition at Earls Court this autumn. Five W.M.P.T.A. members, together with a representative of the erstwhile R.H.A. South Eastern area, now represents the Metropolitan and South Eastern area of the R.H.A. on its meat transport group. The agricultural hauliers' group succeeded in the withdrawal by the Ministry of Agriculture of a proposed regulation limiting the weight of sacks lifted by an agricultural worker to 1½ cwt. from January 1 this year. The Ministry had further proposed to lower the maximum weight to 1 cwt. from January 1, 1961. Now it is holding further meetings with interested organisations before proceeding.

## U.T.A. Break-Up Shelved

CIRCUMSTANCES are unlikely to be favourable in the near future for the Northern Ireland Government to implement its declared intention (on December 5, 1956) to terminate the monopoly of the Ulster Transport Authority in road freight, said the Minister of Commerce (Lord Glentoran) at Stormont last week. The Minister said that the government would have to proceed in that matter with due regard to the effect of its actions upon such considerations as the financial situation of public transport and the employment position. He could not forecast whether the favourable circumstances for which they would have to wait for the introduction of the change were likely to occur in the near future. The indications were that that was unlikely.

## R.H.A. Publicity Campaign

AN appeal is to be made in the near future to all members of the Road Haulage Association to support a publicity campaign on behalf of independent transport operators, said Mr. R. G. Crowther, national chairman, in Newcastle last week. During the past few years, he added, British Road Services had spent substantial sums advertising its services, and it was perhaps a pity that the independent transport industry had not done the same. The public should realise the part independent operators had played in keeping transport costs down. As a result of denationalisation, effective competition had been restored to the industry. This had made B.R.S. more efficient and had brought about a reduction in its charges. Mr. Crowther said it seemed to him that the balance of the industry at the present time was "just right," and he felt that the nationalised side of the industry would not disagree when he said that there should be no more political interference.

## Bus and Coach Developments

Aldershot and District Traction Co., Limited, applies for licences held by Yellow Bus Services, Limited, Guildford. W. C. Cooke seeks a Westwell—Ashford service to operate on Tuesdays and school days throughout the year. Maidstone and District Motor Services, Limited, recently withdrew its Ashford—Westwell service. W. C. Standewick, Limited, applies for the excursions and tours of George Moore and Son (St. Anne), Limited. Eastern National Omnibus Co., Limited, applies for the licences of Rose Bros. (Chelmsford), Limited. London Transport introduced the following Central bus route alterations on or after April 30: 67 withdrawn on Saturday; 96 runs Putney Common—Aldwych on Saturday and is withdrawn Monday—Friday evenings; 98A runs Hounslow Garage—Hillingdon Station at Monday-Friday off-peak hours and Saturday evening; 104 withdrawn; 106 diverted at Becontree via Becontree Avenue; 127 runs Monday-Friday only (not evening); 129A renumbered 129; 182 runs New Cross—Eltham on Monday-Friday evenings; 198 will run on Sunday, between Uxbridge and Hayes Station; 228 Saturday journeys to Park Royal Stadium are withdrawn.



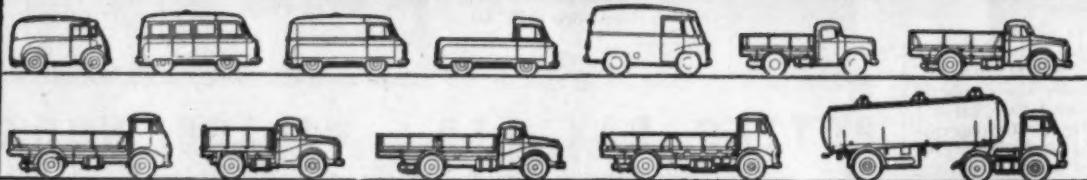
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# ARGENTINE RAILWAY AFFAIRS

## Locomotive and Rolling Stock Replacements

ACCORDING to statements recently published on the condition of the Argentine railways, together with the details of the plans both in execution and under study, to remedy the present state of affairs, some 15,000 kilometres of track and a considerable proportion of the motive power units and rolling stock must be replaced urgently in order to ensure adequate operational efficiency.

As far as motive power is concerned, the diesel locomotives provide the only cause for satisfaction. All of them have been purchased since the nationalisation of the railways. Only 25 per cent of the steam engines can be described as efficient, 39 per cent are in a fair state, and 37 per cent are virtually unserviceable. Details of the rolling stock by age are given in the following table:

	No. of units	Percentages of total units			
		Up to 20 yr.	21 to 40 yr.	41 to 60 yr.	61 yr. and over
Steam locomotives	3,831	5	24	71	—
Diesel locomotives	407	100	—	—	—
Diesel motor coaches	405	61	39	—	—
Electric motor coaches	725	18	29	53	—
Passenger coaches	4,644	11	35	54	—
Goods wagons	83,399	4	31	65	—

Attention is drawn to the considerable proportion of the rolling stock that has exceeded what is generally accepted as the upper limit of useful economic life—40 years. To remedy these deficiencies, contracts for the supply of 371 diesel loco-

makes an annual total disbursement of nearly \$10 million. Furthermore, it is considered necessary to replace 2,400,000 sleepers and 2,400,000 cubic metres of stone ballast are required in order to ballast the tracks adequately. To finance part of the huge expenditure involved, plans are being drawn up for the sale of property belonging to the railways which is not required for the operation of the services, including valuable real estate in various parts of the country.

### Diesel Railcars

The government has ratified the purchase by the State Railways of 300 diesel cars to be supplied by the Italian Fiat S.P.A. and the Hungarian Ganz companies. Tenders for the rolling stock referred to above were called for in 1956, but on February 22, 1957, the State Railways decided to cancel the tender and effect a "preliminary allocation" of the contract to the firms mentioned. Such "preliminary allocation," the recent ratification decree explains, was in the nature of a counter offer, which served as a basis for the subsequent negotiations that resulted in the final contract.

The operation involves an expenditure of \$30,900,000, to be financed by long-term credits; it comprises 90 narrow-gauge coaches for the General Belgrano system; 32 similar units for the General Urquiza line, and 178 standard-gauge coaches for the remainder of the State system. Out of the total of 300, 90 are to be supplied by the

### ARGENTINE RAILWAYS ESTIMATES OF INCOME AND EXPENDITURE IN 1957-58

	Belgrano (including Province)	Roca (including Patag.)	Mitre	San Martín (Thousands of pesos)	Sarmiento	Urquiza	Villalonga	Totals
<b>Income:</b>								
Passengers	338,000	467,700	435,000	196,100	206,400	101,100	—	1,744,300
Goods and livestock	1,104,000	895,700	680,000	601,300	266,400	287,900	22,700	3,918,000
Miscellaneous	127,000	216,200	136,000	115,700	57,900	47,000	27,600	727,400
Total income	1,629,000	1,579,600	1,251,000	913,100	530,700	436,000	50,300	6,389,700
<b>Expenditure:</b>								
Personnel	2,120,000	1,316,000	1,150,000	870,000	500,000	476,000	38,000	6,470,000
Material	385,000	317,000	240,000	209,000	88,000	100,000	2,000	1,350,000
Fuel	400,000	300,000	310,000	200,000	105,000	95,000	1,400	1,411,400
Financial services	42,000	13,300	10,500	8,100	4,000	7,500	100	138,300
Contribution to centralised administration	14,264	7,892	7,700	7,349	4,836	3,014	800	45,954
Amortisation fund	45,000	36,700	32,200	18,700	15,000	10,500	1,800	160,000
Various	84,500	94,800	46,000	24,900	28,700	21,500	10,700	311,200
Total expenditure	3,090,764	2,085,692	1,805,409	1,338,049	745,536	713,714	54,800	9,886,854
Economic deficit	1,461,764	506,092	554,409	424,949	214,836	277,714	4,500	3,497,154
<b>To be deducted:</b>								
Financial services	38,400	13,300	10,500	8,100	4,000	7,500	100	134,700
Amortisation fund	45,000	36,700	32,200	18,700	15,000	10,500	1,800	160,000
Operating deficit	1,378,364	456,092	511,709	398,149	195,836	259,614	2,600	3,202,454

tives have been signed since the revolution of September, 1955, and actual deliveries have numbered 91. In the course of the current year it is proposed to order a further 280, which would bring total purchases up to 651. This year's programme also contemplates the acquisition of 141 electric motor coaches at a cost of 733 million pesos, of which 100 are intended for the Mitre Railway services. In addition, 300 diesel railcars are to be purchased at an estimated cost of 1,200 million pesos. Contracts have been placed for the supply of 2,500 goods wagons, a substantial number of which have already been delivered, it being proposed to acquire 400 ballast trucks to be financed out of the Export-Import Bank credit.

### Suburban Electrification

Plans under study also call for an expansion of the electrified system, which now covers 146 kilometres (Mitre, 83; Sarmiento, 36; Urquiza, 27) and would benefit the suburban services of the Roca Railway with a total length of line of 136 kilometres. Studies are also in progress regarding the building of a tunnel between Plaza Once and Liniers, so that a considerable part of the Sarmiento suburban services would run underground.

### Track Renewal

The National Railway Board reports that out of a total of 45,000 km. of permanent way, no less than 12,000 are in bad condition; 15,600 km. are in only fair state, while 15,900 km. may be considered good and only 1,300 very good. This deplorable situation has been brought about by failure to carry out anything resembling adequate renewals in recent years, only 1,800 km. having been wholly renewed in the past 30 years. About 5,000 km. of track are over 50 years old, and 20,200 over 45 years old, although the limit of serviceability is generally placed at 30 years. Only 2,300 km. of track allow speeds above 100 k.p.h.; 80 to 100 k.p.h. can be attained over a total of 6,500 km.; 60 to 80 k.p.h. over 19,800; and on stretches totalling 16,800 km. the maximum speed is 40 to 60 k.p.h. Only 17 per cent of the track mileage is stone ballasted, shells, slag and other inferior material being used in the rest.

Such situation makes it imperative to replace 15,000 km. of track within the next 10 years, or say, 1,500 km. per annum. Thus an annual purchase of 75,000 tons of rails would be required, which at the present average cost of \$130 a ton

Ganz company and the rest by Fiat S.P.A., which has undertaken to erect a large factory for the building of diesel engines and other rolling stock in the Argentine. The president of the State railways, Engineer Dante A. Ardigó, accompanied by other high officials, is shortly to leave for Japan to study the possibility of purchasing railway material in that country. The mission is travelling at the invitation of a group of Japanese manufacturers.

### Deficit for 1957-58

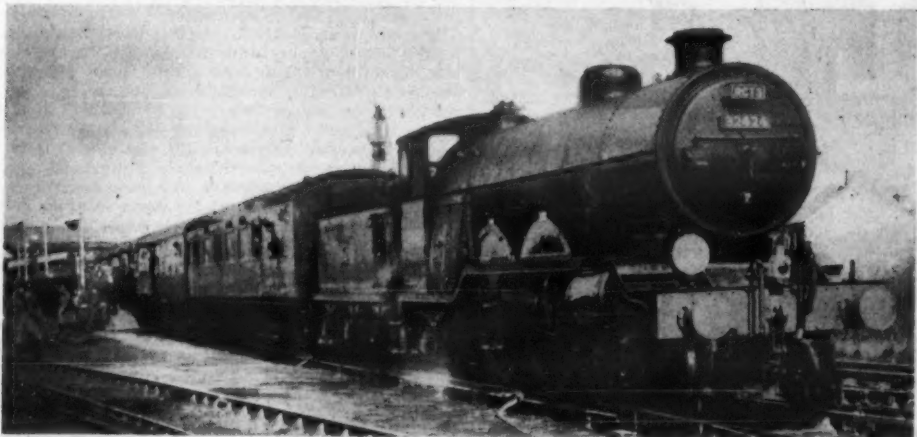
The deficit of the State Railways system for the current financial year (November 1, 1957, to October 31, 1958) has been estimated at 3,497.2 million pesos, and the total revenue will barely suffice to cover the payment of personnel, according to a statement issued by the State Railways Administration. Compared with the previous financial year, wages have risen by 413.4 million pesos, or 7 per cent, to 6,470 million, the difference being partly attributable to higher rates of pay, and partly to the engagement of additional staff and payment of the family bonus.

The biggest deficit is by far that for the Belgrano system—consisting largely of the lines owned by the State prior to the nationalisation of the British- and other foreign-owned companies—which accounts for over 40 per cent of the total for all lines, although its share of the total revenue is only 25.5 per cent. The Belgrano revenue is estimated at 1,629 million pesos. In the official statement this considerable gap is explained by the fact that many of the lines comprised in the old system were intended for development purposes, and not as money-making propositions.

The National Budget for 1957-58 placed the railway deficit at 2,443 million pesos, i.e. roughly 1,000 million pesos less than the sum now tabulated. It was then provided that the deficits were to be covered by the proceeds of the sale of Government bonds.

The Birmingham area sales office of Northern Aluminium Co., Limited, has moved to new premises at Devonshire House, Great Charles Street, Birmingham, 3, where it will continue under the management of Mr. D. W. Taylor to serve the needs of the Midlands counties for all Noral aluminium and aluminium alloy materials. The telephone number is changed to Central 7393 but the telegraphic address, Noralumin Birmingham, remains the same.

### LAST RUN OF BRIGHTON ATLANTIC



Former L.B.S.C.R. engine No. 32424 "Beachy Head" about to leave Newhaven for the last time—on an R.C.T.S. special. An editorial note appeared in our April 26 issue

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## Trams Cease in Aberdeen

(Continued from page 3)

Street to termini in less congested areas. Practically every Aberdeen route has to traverse or cross Union Street to meet public demand.

An interesting economy feature has been the conversion of the bus route to the Sea Beach to one-man single-deck operation during winter months when its revenue is very poor. As with the present development at either end of the No. 1 tram service, the motor buses have already been of the utmost value in serving housing estates away from the other tram routes without heavy capital investment. The development of the city towards and beyond the boundary has been remarkable in recent years and it is interesting that at least on the Kincorth estate granite is still employed as the traditional building material. The city transport undertaking, except for the Balgownie journeys, is confined to the city limits; W. Alexander and Sons, Limited, provides outer suburban facilities which were in fact inherited from the erstwhile Aberdeen Suburban Tramways Company.

### One Depot Only Now

An interesting work of consolidation has taken place in the depot accommodation of Aberdeen City Transport Department. There were formerly tram depots at Queen's Cross, Woodside and King Street—and still earlier there were tram depots on every route, some being of ridiculously small dimensions such as the one for five trams on the Torry line. Queen's Cross is temporarily still used for storing cars pending disposal. Furthermore, there were bus garages at Sea Beach, Canal Road, Mannofield and Advocates Road. Now the entire fleet is centralised in the King Street—Advocates Road site, although many of the buses are for the time being kept in the open. Eventually it is anticipated that there will be 220 buses, one-third of which will normally be kept out of doors. This has not been found to have serious effect on the paintwork as long as the bus does not stand without moving for days at a time. At a pinch it would be possible to get most of the fleet under cover in hard frost.

It is of interest that the King Street premises were a former Gordon Highlanders' barracks which was bought in 1914 by Mr. Stuart Pilcher, when he was general manager, at a bargain price. During the 1914-18 war it was let back to the military authorities at a substantial rent. The site has been added to over the years and most recently by

acquisition of the property of two granite firms which gives a useful area for expansion. The depot is now being rearranged to increase the efficiency of maintenance and overhaul. Eventually Advocates Road, which is private, may be roofed over.

### Depot Alterations

The alterations now being carried out at King Street are designed to make the best use of the shops formerly provided for tramway purposes to cope economically with the present bus fleet. The maintenance and overhaul are based on a 10-day greasing and inspection programme; light docks are carried out at 6,000 miles; top overhauls are scheduled for approximately 100,000-mile intervals and full overhauls for twice that mileage. Only crankshaft grinding is put out to a specialist firm. In the shed devoted to maintenance work 10 pits are provided; three are normally allocated to greasing, topping up batteries and inspection, the others being employed for light docks. It is intended to put in six further pits on the other side of the shed; by setting them on the skew the maximum floor space will be left for manoeuvring in and out. An interesting feature here is the provision of a Wakefield sump oil changer; this removes the oil from the sump and replaces it with fresh oil by operation of a changeover valve in 3 min. It is necessary to provide the vehicles with a special opening in the crankcase near the dipstick well for this purpose. The old oil is taken away by contract. All the piping and plumbing for this equipment is being installed by the department.

Major overhauls are carried out in one of the shops of the original premises; to offer easier facilities for coping with 30-ft. long vehicles the wall and doors are, however, to be placed further out from the ends of the six pits provided. These pits are well arranged with cross-trench communication at the rear of the shop. On them engines and other units are stripped out of the chassis frame and all items are replaced from the float of overhauled engines, gearboxes, axles, etc. In the paint shop the practice is to give a touch up and varnish at two and a half years and a full repaint every five years to accord with the terms of the certificate of fitness. Despite the light green colour scheme this is satisfactory in the relatively pure air of the Granite City.

### Body Reconstruction

The sheet metal and body repair shops are well lit and equipped. The work in hand on a recent visit included the rebuilding of the first of a series of wartime and immediately postwar utility bodies—which have already given good service for that class of construction—so as to have extra buses of smart appearance available for the Scottish Royal Show traffic next year. Besides replacing damaged pillars and rails opportunity has been taken to modernise their appearance by reglazing on the flush-fitting Claytonite system. The result is a smart-looking body which does the undertaking credit, produced at low cost and securing a four and a half-year c.o.f. An old single-deck bus on a Daimler chassis with A.E.C. 7.7-litre engine was being converted to a sanding lorry to enable the department to cope with making safe a higher mileage of road quickly in icy weather in winter. A crew cab is inserted behind the driver's cab.

Other items connected with improvement of day-to-day routine include the provision on the south side of the depot of an umbrella-roofed refuelling point for four vehicles at a time. At present there are only two derv pumps available and both are in the open. A Dawson washer is to be installed and there will be a continuous flow of vehicles through the filling and cleaning process. The existing Essex washer will continue to be used for hot water washing on the day shift. In this part of the premises is a hoist for cleaning chassis by steam jenny—a Weaver and a Wickham unit are available. The Jenson process with equipment by D. Wickham of Stevenage is used for cleaning metal parts upon their removal from chassis.

In the erstwhile tramway shops the former machine shop is being turned into a stores department. A rack-type index is provided with bin numbers, part description and part numbers, and the bins are of Sankey Sheldon type. Dexion strip is used for building up stands for larger items. Serving hatches are being built between the new stores and what has been the tramway running shed, where on our visit one of the first bogie cars, No. 138, was being prepared for disposal. The overhead crane has been taken down and soon the pits will be filled in, the under-pit heating having been brought up to floor level, and purely tramway equipment such as the wheel drop and the body hoist will be removed. The new engineering and machine shop is being laid out in the former tramcar bodywork and paint shop; a feature will be that all tools are motorised.

### Fuel Pump Shop

In an upper room a well-laid-out fuel pump shop has been provided. Glass from old trams has been used to make a false ceiling here to assist in making it dustproof. There are two Hartridge fuel pump testing benches and a Merlin unit for nozzles as well as a hand-operated injector test bench. Also alongside the tramcar running shed is the electrical shop, with a Crypton test bench for bus electrical equipment. The battery shop contains a Crypton Batterymaster charging plant. A Champion sparking plug cleaner is also available to deal with the private cars and miscellaneous petrol vehicles maintained for the Corporation.

The one-time married quarters of the barracks form a useful depot traffic office, as distinct from the department's centrally placed head office in Marischal Street where the chief officers can see the operation at the Castle Street junction of the King Street and Union Street routes. The men pay into a night safe in the conductors' room. Each conductor records his ticket machine and box number and signs for a specifically numbered money bag. Practically all the ticket issue is from Bell Punch Ultimate machines. The final ticket and cash analysis is carried out by the Hollerith organisation in its own premises as a contract job, the necessary punched cards being supplied by Aberdeen Corporation Transport. A further section of the department housed at King Street is the tailoring department. Uniforms are made to stock sizes, but, of course, outside staff have made-to-measure uniforms. Raincoats are purchased.

We are indebted to Mr. F. Y. Frazer, general manager, Aberdeen City Transport Department, for the opportunity of seeing the work of his undertaking and for the information supplied and also to his staff, including Mr. J. Mackie, the engineer, for the facilities accorded us.



### THE BP RESEARCH STATION ENGINEER SAYS—

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# FAST-RUNNING SMALL DIESEL

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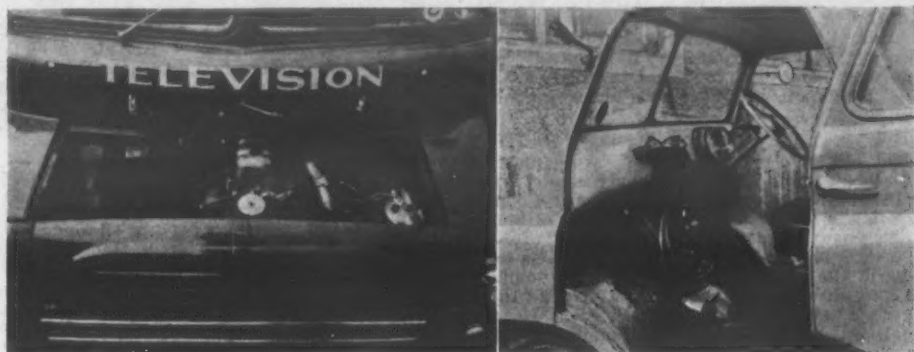
## NEW COMBUSTION SYSTEM AND DISTRIBUTOR PUMP

**A** GLEAM for some years past in the collective eye of the design, development and sales staff of F. Perkins, Limited, pioneer of the quantity-produced lightweight automotive diesel engine, last week brought forth for public appraisal what can certainly be claimed as the nearest approach yet to an entirely acceptable diesel alternative for the petrol engine in cars, vans and taxicabs. Designated Four 99 (four cylinders, 99 cu. in. capacity), the new engine is compact in size and weighs only 320 lb. It is governed to 4,000 r.p.m. in car applications and 3,600 r.p.m. in van applications, providing performance in normal usage not sensibly different from that with the original petrol engines, appears quieter in all

mushroom-base tappets, also with chill-hardened faces, pushrods and forged-steel rockers with ball-ended adjusting screws.

### Automatic Timing

The C.A.V. DPA fuel-injection pump lends itself to variable timing by hydraulic means and this feature is provided on variable-speed (automotive) engines. The pump comprises an eccentric-vane feed pump which maintains a pressure between two radially disposed plungers and holds them in contact with a cam ring having contours which act on the rotated plungers to provide the injection pressure. Automatic timing adjustment is provided by arranging that the cam ring, instead of being held



Two views of the Perkins Four 99 installed in a Bedford CA-type van of St. Cuthbert's Co-operative Association, Edinburgh

operating regimes than any other four-stroke diesel we have heard and can be expected to provide the usual diesel advantages of great fuel economy, high reliability and big mileage between major overhauls.

### New Combustion Chamber

Among the interesting features of the Four 99 are a C.A.V. distributor-type fuel-injection pump, a C.A.V. Thermostart cold-starting aid built into the air manifold and indirect injection based on a new Perkins-patented combustion system specially developed for this small cylinder size. The combustion chamber is contained entirely in the cylinder head and comprises an upper hemispherical part machined in the head and a lower part formed by an inserted machined plug. The insert contains an oval port or throat that connects the chamber to the cylinder and the pintle-type injector nozzle is located nearly vertically in the upper half.

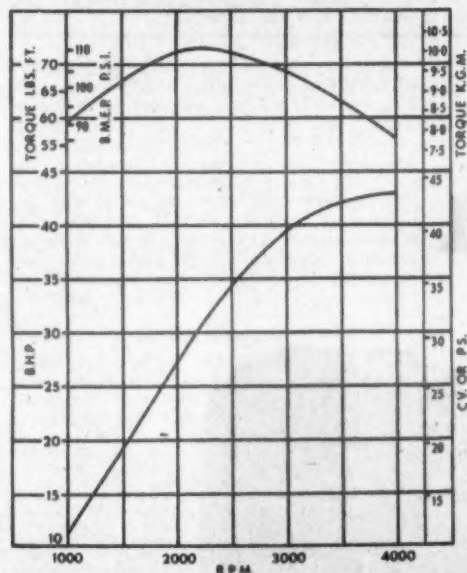
During the greater part of the compression stroke, air is transferred from the cylinder to the chamber vertically upwards through the oval port to produce a swirl that moves transversely across

in fixed relation to the pump casing, is free to rotate within the limits set by the design, thus advancing or retarding the start of the delivery stroke of the two pump plungers. The position of the cam ring is controlled by a spring on one side and a hydraulic plunger actuated by fuel feed pressure, which rises and falls with engine speed, on the other.

The pump incorporates a hydraulic speed governor on vehicle engines and a mechanical governor on industrial engines and is fed by a diaphragm-type lift pump, with hand primer, driven from the engine camshaft. There is an oil drain connection in the injection pump housing to return excess fuel to the tank or fuel filter and this return line also permits air entrained in the fuel or trapped in the pump to be displaced by fuel. The system is protected by a paper-element filter, which can be mounted on either side of the cylinder block. Assistance for cold starting is provided by a C.A.V. Thermostart heater fitted in the induction manifold, which is protected by an oil-bath air cleaner.

### Lubrication and Cooling

A Hobourn-Eaton gear-type pump supplies lubricating oil through a full-flow filter under pressure to crankshaft and camshaft bearings and valve gear, while the cylinder bores and small ends are splash lubricated. A belt-driven centrifugal pump circulates coolant through the cylinder head, where it is directed at the exhaust ports and combustion chambers, and circulation through the cylinder block is by thermo syphon. Circulation is con-



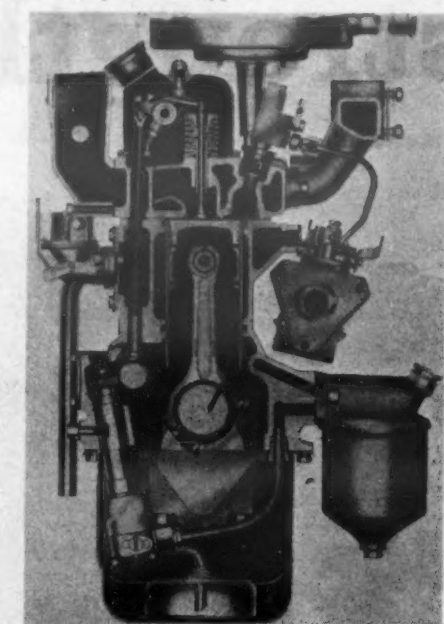
Performance curves of the Four 99 for vehicle applications

the nozzle. In the later stages of compression, the direction of the transferred air changes gradually from vertical to horizontal and when combustion is about to begin, the final air transfer takes place violently through passages machined in the head and insert, promoting considerable turbulence in the air-fuel mixture already present in the combustion chamber and ensuring utilisation of the maximum quantity of air. Much of the development work on the engine has been in connection with combustion chamber design and fuel injection characteristics to secure the most efficient combustion over the entire range and trouble-free running at the high speeds permitted by the distributor-type fuel-injection pump.

### Principal Engine Details

Generally, the Four 99 design follows conventional automotive-diesel practice. The cylinder block is integral with the crankcase and is of high-duty cast iron, with centrifugally cast iron wet cylinder liners flanged at the top and sealed by a synthetic rubber ring at the bottom. The one-piece cylinder head is also of high-duty cast iron and accommodates the combustion chambers and injectors as already described and one inlet and one exhaust valve per cylinder. Inlet valves are of En. 18s and exhaust valves of En. 52 alloy steel, the double springs seat on hardened steel pressings in the head and felt seals are fitted to inlet-valve guides.

A forged chrome molybdenum steel crankshaft has integral balance weights, and crankpins and the three main journals are induction hardened. Main and big-end bearings are of the prefinished steel-backed lead bronze-lined type. High-tensile steel connecting rods have big ends split at 45-deg. angle to permit withdrawal through the bores and carry the five-ring light-alloy pistons on circlip-retained fully floating gudgeon pins. The helical-toothed timing gears are enclosed by a pressed-steel cover and the cast-iron camshaft, with chill-hardened cams, operates the valves through



This transverse section through the engine shows the principal constructional features and the new patented combustion chamber

trolled by thermostat. The 12-volt electrical equipment includes a Bendix-engagement starter motor, which can be mounted on either side, and a belt-driven dynamo. Both the sump and rocker cover are steel pressings.

With four cylinders having bore and stroke dimensions of 3 in. (76.2 mm.) and 3½ in. (88.9 mm.), giving a swept volume of 99 cu. in. (1.621 litres), and a compression ratio of 20 to 1, the Four 99 in vehicle form operates at a maximum b.m.e.p. of 111.2 p.s.i. (7.83 kg. per sq. cm.) At its governed speed of 4,000 r.p.m. for car applications it develops 43.2 b.h.p. gross. In commercial vehicle applications, governed to 3,600 r.p.m., it develops a maximum of 42 b.h.p. Maximum torque in both cases is 73 lb./ft. at 2,250 r.p.m. An industrial version with a 12-hr. rating under BSS649/1949 conditions of 32-35 b.h.p. at 3,000 r.p.m. is also available.

The new engine has been introduced only after intensive research and extensive bench and field trials since the first design study in 1952. In practical testing, well over a million miles have been accumulated in a variety of conditions and different vehicles, about a third of it at the Motor Industry Research Association proving ground at Lindley. There, for example, a Bedford CA van with a 15-cwt. load has covered over 101,000 miles on the high-speed track lapping consistently at 56 m.p.h. for an average fuel consumption of 37 m.p.g. A

(Continued on page 10)

# Butterfield

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# Foden

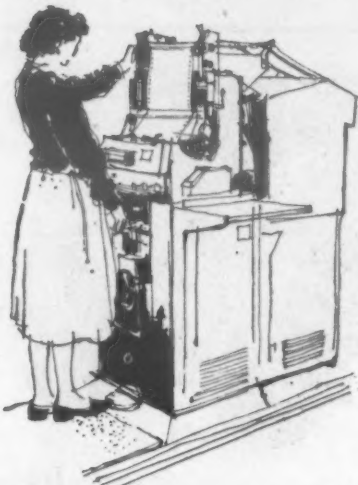


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## NEWS FROM ALL QUARTERS

### Battery Railcar Service

Mr. J. W. Barr, district traffic superintendent, Aberdeen, Scottish Region, B.R., was at Aberdeen Joint Station on April 21 to welcome the first passengers travelling by the battery railcar (see April 12 issue) from Ballater and to inaugurate the first public run from Aberdeen to Ballater at 9.40 a.m.

### R.O.Co. Membership Drive

At the end of 1957 the membership of the Road Operators Safety Council comprised 187 undertakings and 82,097 drivers were entered for its safe driving competition. During 1958, a fresh membership drive is being made; the aim is to embrace all professional transport drivers, says the second annual report.

### U.S. Postal Traffic

Faced with heavy operating deficits of its own, the United States Post Office is resisting demands by 26 Eastern railroads for a 70 per cent increase in mail rates. A spokesman before the Interstate Commerce Commission threatened that the Post Office might take its traffic away from rail. "There is no mail traffic that could not be diverted," he said. The proceedings have been under way since July, 1956.

### Leeds Ring Road Extension

An M.O.T. grant of over £185,000 has been made to the Yorkshire West Riding County Council towards the cost, estimated at £247,350, of building an extension to the Leeds Ring Road. It will be a three-lane carriageway about 1½ miles long and will run from the western terminal point of the Ring Road at the Leeds—Shipley Road (A657) to the Leeds—Bradford Road (A647). Roundabouts will be provided at these junctions.

### Nottingham Inner Ring Road

An M.O.T. grant to Nottingham Corporation of £104,000 will go towards the cost, estimated at £138,000, of building a section of an inner ring road for Nottingham. The ultimate intention is to drive a new road, with two three-lane carriageways, from Castle Boulevard (A453) to Derby Road (A52). As a first instalment the present scheme provides for a new road extending for 400 yd. northwards to Friar Lane from a roundabout at the junction of Castle Boulevard and Grey Friar Gate. It will have a single 30-ft. carriageway.

### Radio Collections from Fylde Growers

British Railways is shortly to equip parcel vans which collect produce from 600 growers in the Fylde district with two-way radio telephones so that the drivers out on the road can be diverted immediately to a grower who has made a request for collection of his produce, no matter what time the request is received by the Blackpool agent. The result will be quicker collection, a more economical use of transport and the timing of collections to meet the convenience of the grower. The London Midland Region each year carries 300,000 boxes of this produce weighing 3,000 tons and has 16 road vehicles engaged on its collection and the return of empties.

### McLaren Diesel Production Ceasing

Owing, it is stated, to the strength of German competition, J. and H. McLaren, Limited, has decided to cease production of diesel power units in Leeds. The company is part of the Brush group which has adequate production capacity for diesel engines at other factories. Other uses will be found for the Aire Dale works in Leeds.

### Blackwall Tunnel Approach

Mr. G. R. H. Nugent, Joint Parliamentary Secretary to the Ministry of Transport, on April 21 inaugurated work on the new northern approach to the Blackwall Tunnel under the Thames, with a two-level junction where it crosses the East India Dock Road. This is the first step towards construction of a duplicate tunnel to be built to the near east of the existing one.

### Welsh Branch Line Service Goes

Passenger train service between Bridgend and Nantymoel on the Western Region is to be withdrawn on and from Monday, May 5. Blackmill Station and Wyndham Halt will be closed for all purposes, but Brynmynyn, Ogmere Vale and Nantymoel stations will remain open to deal with certain parcels traffic. Tondy will continue to be served by passenger trains on the Bridgend to Abergwynfi service.

### C.I.E. Fares Up

Road and rail passenger fares on Coras Iompair Eireann services go up by 5 per cent all round from May 12. The minimum bus fare in Dublin goes up from 2d. to 3d. It is hoped to secure £462,000 in additional revenue, but expenditure is estimated to have risen by £653,000 per annum; the shortfall will be covered by service economies. A "temporary reduction" in the volume of passenger traffic is expected.

### London Waiting Restrictions Extended

Regulations which will come into operation on June 1 introducing certain general changes in the London traffic waiting restrictions mean that restrictions on waiting vehicles in the Metropolitan Police district, with minor exceptions, will start at 8.30 a.m. instead of at 11.30 a.m. as at present. With minor exceptions vehicles will be permitted to load or unload up to 11 a.m. From then until 6.30 p.m. there will be a 20-min. permitted period.

### Stratford Canal Protest Meeting

The Stratford Canal Society, in conjunction with the Inland Waterways Association, to which it is affiliated, organised a protest meeting against the proposal to close the canal route to Stratford-upon-Avon on Saturday, April 26, at Stratford Town Hall. Warwickshire County Council has lately announced that it proposes to request the Minister of Transport to abandon the southern section of the Stratford Canal by warrant under the Rail and Canal Traffic Act, 1888. It is believed that the request has not yet been forwarded to the Minister, and hoped that this is under pressure from public opinion. The Minister is thought unlikely to issue a warrant if there is appreciable opposition to the abandonment, says the Society.



Latest addition to Pressed Steel Company Limited British Railways production: new 58 ft. gangwayed Standard Brakevan.

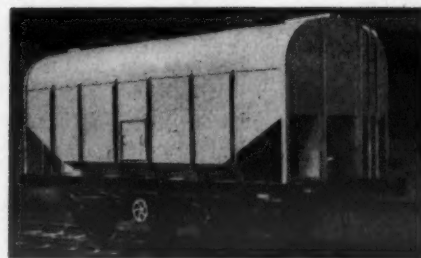
## Built in strength

Add to the strength of steel the quality of British craftsmanship. Back it with the manufacturing facilities and experience in steel of one of Britain's greatest engineering organisations and the products will be wagons and rolling stock by Pressed Steel Company Limited for the railways of Britain and the railways of the world.

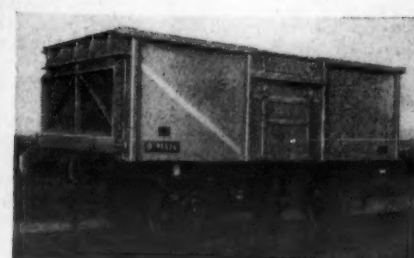


### A 60,000 RECORD

British Railways have already taken delivery of over 60,000 16-ton all-steel mineral wagons produced in our Paisley works.



20-ton capacity Bulk Grain Van to the order of British Railways.



16-ton mineral wagon to the order of British Railways.

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## COMMERCIAL AVIATION

### The Comet 4 Flies

#### CREDIT CARDS POPULAR

THE new de Havilland Comet 4, G-APDA, with four Rolls-Royce Avon engines, made a successful first flight at Hatfield on April 27, piloted by John Cunningham. It took off at 6.15 p.m. and flew for 1 hr. 23 min. This is the first of 19 Comets now being built for service with the British Overseas Airways Corporation. Accompanying Mr. Cunningham in the Comet were: Messrs. Peter Bugge, co-pilot, E. Brackstone Brown, flight engineer, J. L. Johnston, flight observer, and J. Marshall, instrument observer. After landing Mr. Cunningham said the Comet behaved splendidly on its maiden flight, during which he put the aircraft through a series of preliminary handling trials and verified the correct functioning of the various aircraft systems. The new Comet 4 will now embark on a programme of air testing and performance measurement including tropical trials directed towards obtaining a full passenger carrying certificate of airworthiness, a process which will be greatly hastened by the extensive development flying already accomplished with the Comet 3 aircraft. Delivery of the first Comets to B.O.A.C. is due to begin towards the end of 1958 and the aircraft are expected to go into service on the routes to Australia, the Far East and South Africa. It is understood that B.O.A.C. is studying also the possibility of putting the Comets on the North Atlantic route between London and New York. The Comet 4 is powered by four Rolls-Royce Avon RA 29 Mark 524 engines each delivering 10,500 lb. of thrust and its total all-up weight is 156,000 lb. Its cruising speed is 510 m.p.h. and the normal cruising altitude is between 38,000 and 42,000 ft. With a payload of 56 first-class passengers and 8,400 lb. of mail and freight, and with fuel reserves for climb, descent, stand-off and diversion, the Comet 4 can fly 3,000 miles in still air.

#### B.O.A.C. Empire Games Tour

A special tour for Americans and Canadians who wish to see the British Empire Games at Cardiff from July 18-26 has been announced by B.O.A.C. in New York. The tour begins at Montreal and arrives at Cardiff in time for the evening opening of the games. Later the party will go on to visit the Festival of Wales, Stratford, Oxford and London before returning to North America on August 1. The inclusive cost of the tour, which is sponsored by *Track and Field News*, will be \$830 (£296 8s. 7d.).

#### Qantas Acquires Fiji Airways

Qantas Empire Airways has purchased Fiji Airways, the small airline which serves the Fiji group, from its base near Suva. Q.E.A. will continue to operate Fiji Airways and has appointed Captain R. O. Mant as its manager; Captain Mant was formerly Qantas assistant operations manager (administration). It is planned to consolidate Fiji Airways and expand its operations. This will probably require new capital and larger aircraft than the de Havilland Drovers which the airline now uses, depending upon the development of aerodromes.

#### B.E.A. Poznan Fair Service

B.E.A. has made special arrangements for its Warsaw service to call at Poznan while the Poznan Fair is in progress between June 3 and 24. B.E.A. opened the first regular air service between London and Warsaw on April 8 with twice-weekly flights on Sundays and Tuesdays in both directions. The 47-seat Viscount 700 turboprop air liner covers the 950-mile non-stop flight in 3 hr. 50 min. The Polish airline, L.O.T., began its twice-weekly service to London on April 9 using American-built Convair aircraft. L.O.T. is now negotiating for the purchase of a number of British Vickers Viscount air liners.

#### New Services Approved

The Minister of Transport and Civil Aviation, after considering the recommendations of the Air Transport Advisory Council, has approved the operation of the following air services:

Inclusive tour service on the route Lydd and/or Gatwick—Pisa; Silver City Airways, Limited, until September 30, 1958.  
Inclusive tour service on the route Lydd—Lyons; Silver City Airways, Limited, until October 31, 1958.  
Inclusive tour service on the route London (Blackbushe)—Valencia; Eagle Aviation, Limited, until November 16, 1958.  
Inclusive tour service between London and Nice; British European Airways from May 3 to September 28, 1958.  
Normal scheduled service on the route London—Zurich or Geneva—Belgrade and/or Athens and/or Tel Aviv and/or Istanbul and/or Beirut; British European Airways until March 5, 1959.  
Normal scheduled service on the route Manchester (Ringway)—Brussels—Frankfurt; Eagle Airways, Limited, from March 4, 1958, until June 19, 1959.  
Normal scheduled service on the route Blackbushe and/or London Airport—Strasbourg (Entzheim); Eagle Aviation, Limited, until March 28, 1960.  
An inclusive tour service on the route Southampton Water or Lydd and/or Gatwick and Palma; Britavia, Limited, until October 20, 1958.  
An inclusive tour service on the route London (Blackbushe) and Nice; Eagle Aviation, Limited, until November 16, 1958.  
Normal scheduled service between Lymington and Brussels and/or Antwerp; Skyways, Limited, until October 31, 1958.  
An inclusive tour service on the route Lydd and/or Gatwick—Basle; Silver City Airways, Limited, until October 31, 1958.  
An inclusive tour service on the route Lydd and/or Gatwick—Toulouse; Silver City Airways, Limited, until October 31, 1958.  
Inclusive tour service on the route London (Blackbushe)—Turin; Eagle Aviation, Limited, until October 19, 1958.  
An inclusive tour service from Blackbushe to Palma; Eagle Aviation, Limited, until November 2, 1958.

#### Success of Credit Cards

More than 800,000 air travellers now subscribe to the Universal Air Travel Plan system of the scheduled airlines of the world. With a gain of 30,000 in the past year—14,000 of them in the international section—U.A.T.P. credit card subscribers now total 820,375. Their cards are valid on the services of 103 airlines. Mr. John A. Lundmark, secretary of the plan, recently termed this "a truly remarkable testimony of worldwide airline co-operation." The system is sponsored jointly by the International Air Transport Association and by the Air Traffic Conference of the Air Transport Association of America. It is administered from offices in Washington, D.C. Credit cards are distributed as follows:

	1957	1958
North America ..	564,470	559,114
International ..	255,048	230,863
Controlled ..	225	250
Germany ..	32	31
<b>TOTAL</b>	<b>820,375</b>	<b>790,258</b>

The North American cards are for transport in the North American continent and contiguous islands; the international cards are for worldwide travel; and the controlled cards can be used within limitations prescribed by certain countries on the amount of money their residents can spend on foreign travel.

## INTERNATIONAL ROAD FEDERATION



*Reginald Biddle*

Sir REGINALD BIDDLE, C.B.E., T.D.,  
J.P., M.Inst.T.

Elected chairman of the International Road Federation Council in London, Sir Reginald Poulton Biddle spent twenty years as docks and marine manager of the Southern Railway and subsequently of the Southern Region. He entered the service of the former London and South Western Railway in Jersey in 1905, and was transferred to the marine department at Southampton early in 1907. Commissioned in the Hampshire Regiment (T.A.) in 1915, he served with his battalion in India, and subsequently in Palestine until his unit was disbanded. He then received an appointment on the embarkation staff, and when demobilised in 1920 was in charge of Port Said. On return to railway duty, he was appointed personal assistant to the docks and marine manager of the L.S.W.R. He became assistant docks and marine manager of the Southern Railway in 1933 and succeeded Sir Eustace Missenden as docks and marine manager in 1936. His services were loaned in March, 1941, to the Ministry of War Transport, where he was deputy Director of Ports and resumed his appointment as docks and marine manager in October, 1945, after having for the previous six months been Regional Port Director, North-Western Area. He received the C.B.E. for services in connection with the planning of the Normandy invasion and holds a number of foreign decorations, as well as being an officer of the Order of St. John and holding the Territorial Decoration, with the rank of lieutenant-colonel in the Engineer and Railway Staff Corps (R.E.). Sir Reginald, who was created knight bachelor in the Birthday Honours, 1957, is a Deputy Lieutenant of the County of Hampshire, a Justice of the Peace for the Borough of Southampton, and a governor of Southampton University. Formerly prominent as a member of the B.T.C. Docks Management Board, vice-chairman of Southampton Harbour Board and chairman of the Southampton Port Employers' Association, he has since his retirement from the Southern Region in 1956, become a director of C. G. Hibbert and Company and of Taylor-Woodrow (Overseas), Limited; he is chairman of the Southern Region of Eagle Star Insurance Co., Limited, and is a consultant for several companies connected with the shipping industry.

## AERO ENGINES

### Bristol and Hawker Siddeley

#### CO-ORDINATE ACTIVITIES

ON April 28 the Bristol Aeroplane Co., Limited, and the Hawker Siddeley Group, Limited, announced that they had agreed to co-ordinate the activities of their engine companies—Bristol Aero-Engines, Limited, and Armstrong Siddeley Motors, Limited. To give effect to this agreement a new company, Bristol-Siddeley Engines, Limited, is being formed. It will be jointly owned by the two companies and will have Sir Arnold Hall as its chairman and Air Commodore F. R. Banks as vice-chairman. The other directors will be Sir W. Alec Coryton, Mr. H. T. Chapman, Dr. S. G. Hooker, Mr. W. F. Saxton, Mr. G. L. Hack and Mr. W. H. Lindsey.

In a joint statement Sir Reginald Verdon Smith, of the Bristol Aeroplane Company, and Sir Frank Spriggs, of the Hawker Siddeley Group, said: "The change in character of aviation, and thus the change in demand for aero-engines, poses a challenge that the two companies have decided to meet by adopting a common technical, manufacturing and marketing policy, and the agreement is designed to achieve the most efficient use of their combined resources."

"Under its powerful board the new company will undertake the development of new projects supported by the Ministry of Supply," will submit proposals and accept contracts, and will utilise the resources—research, engineering and manufacturing—of Bristol Aero-Engines and Armstrong Siddeley Motors. This means, in effect, that a new giant of immense capability will take a place of leadership in the aero-engine field covering the entire range of turboprops, turbojets, ramjets and rocket motors."

#### Combined Assets

The new company will have at its disposal capital assets of over £31,000,000 and a labour force of 27,500. The current turnover of the two engine companies is over £60,000,000. The chairman of the new company, Sir Arnold Hall, said: "There will be a complete exchange of technical information between the two operating companies, Armstrong Siddeley and Bristol Aero-Engines. We are also arranging forthwith for combined production planning and inter-company sub-contracting. There will be a common technical policy. Selling activities at home and overseas will be combined so far as it is compatible with existing commitments. An interesting feature of this combined operation is that, in fact, the two companies produce an entirely complementary range of products and they fit together into an ideal technical and sales pattern."

"We are in business to offer the strongest possible technical resources, combined with unrivalled production facilities and with a tradition and history of great achievement behind us." Bristol-Siddeley Engines, Limited, will be owned 50-50 by Hawker Siddeley and Bristol.

## LAND SUPERTANKERS

### B.P. Orders Large Fuellers

WITH the impending introduction into service of the new large jet aircraft, the oil companies will shortly be required to provide fuelling facilities with greater flow rates and capacities at all major airports. To meet this demand, the British Petroleum Co., Limited, has, as recorded briefly in our issue of April 26, placed an initial order for two exceptionally large mobile fuellers. These will be used at least during the interim stage, while experience is gained in handling and parking these massive aircraft and a parking pattern is devised that will permit the installation of a practical hydrant fuelling system. Contracts have been placed with Thompson Brothers (Bilston), Limited, and Saunders-Roe (Anglesey), Limited, for two prototype fuellers each of 10,000 Imp. gal. capacity and with a maximum flow capacity of 750 gal. per min. Named Yorkshire, these new-type fuellers will incorporate all the latest techniques to aid rapid and safe service which have been developed by the oil companies and the supply industry. They are the largest ever ordered and are about three times the capacity of the average fueller in current use at airports.

#### Semi-Trailer Units

The fuellers are to be built on bogie drop-centre semi-trailers and hauled by A.E.C. 165-b.h.p. diesel tractors with a longer wheelbase than usual to accommodate pumping and delivery equipment behind the cab. The overall length of the vehicle will be 49 ft. 9 in. and the height 10 ft. 6 in. The semi-trailer tank of 10,000 Imp. gal. useful capacity will be divided into three compartments and constructed of aluminium alloy. The equipment will include a newly developed self-priming centrifugal pump by Peggsons, Limited, and metering equipment by Avery-Hardoll.

To meet the high standard of filtration required for jet fuels, the fuellers will be equipped initially with Rellumit fine-particle filters and water detection devices will be installed as an added protection against contamination. Zwicky pressure-control equipment will provide the high standard of pressure control necessary when delivering fuel through direct connections to aircraft. The work has been given a high priority and it is hoped to have the fuellers in service in the early part of next year.

## ATOMS FOR PEACE

### U.K. Participation at Geneva

BRITAIN is to play a leading part in the second International Exhibition of the Peaceful Uses of Atomic Energy, which is to be held at Geneva from September 1-14, 1958, concurrently with the United Nations Atomic Energy Conference. The Nuclear Energy Trade Associations' Conference, 32 Victoria Street, London, S.W.1, which is responsible for co-ordinating the British effort, has reserved more than 40,000 sq. ft. of floor space at the Geneva Palais des Expositions—a larger area than has been set aside for any other country.

Much that is new and some that is revolutionary will be on show by the 50 participating British organisations, reflecting the effort that is being made to maintain the present British lead in nuclear engineering.



## OFFICIAL NOTICES

JAMAICA OMNIBUS SERVICES, LIMITED  
VACANCY FOR CHIEF ENGINEER

JAMAICA Omnibus Services, Limited, have a vacancy for a Chief Engineer. The Company, which operates omnibus services in the corporate area of Kingston and St. Andrews, Jamaica, B.W.I., has at present a fleet of 140 vehicles, but gradually extending, a staff of over 900 and up-to-date headquarters, maintenance shops and office premises.

Applications are sought from individuals who have already held a senior appointment within the industry and who have had considerable administrative as well as technical experience in the maintenance of a fleet of public service vehicles and in the control of staff.

The appointment will be for an initial term of five years and, subject to renewal, will continue thereafter on a three-yearly basis.

The salary offered will depend upon the applicant's experience and qualifications, but the commencing figure will be not less than £2,000 per annum. In addition, an overseas allowance of £350 per annum will be paid and a rent-free house provided.

Passage will be paid to Jamaica for the successful applicant and family and three months' home leave will be allowed on completion of three years' service, with paid return passages for the officer and his wife.

Applications, which will be treated in strict confidence, should be sent under private cover to the Secretary, The B.E.T. Federation, Limited, Stratton House, Piccadilly, London, W.1, to reach him not later than May 21, 1958, giving full particulars of the applicant's career with a front summary sheet showing:

1. Name and address.
2. Age.
3. Whether single or married, and in the latter case, the number and ages of any children.
4. Education.
5. Professional or technical qualifications.
6. Brief statement of present and previous appointments arranged chronologically.
7. Present salary.

WEST PAKISTAN ROAD TRANSPORT BOARD  
CHIEF TECHNICAL OFFICER

WANTED a Chief Technical Officer in the grade of Rs.1,500—50—2,000 for the West Pakistan Road Transport Board.

**FOREIGNERS.**  
Qualifications—Degree in Automobile Engineering or Mechanical Engineering from a recognised University in Europe.

Experience—At least 15 years experience in maintenance and repair of vehicles, and should have adequate experience in designing and building of bodies, administration of workshops and wide administrative experience of controlling technical staff and handling store organisations.

Pay—Rs.2,000 (two thousand) only P.M.

Overseas Pay—£30 (thirty pounds) P.M.

Accommodation—A free house suitable to his status.

Conveyance—Free conveyance.

Medical Aid—Free medical treatment by the board's doctor.

Duration of Service—On four years' contract.

Leave—One month's leave on every 11 months' duty.

Other concessions—

- (i) Free passages for himself and wife on joining the post.
- (ii) Free passage after termination of the contract, for self and wife.
- (iii) One return passage once in two years during the currency of the contract.

Applications, duly supported by testimonials, should reach the Secretary, West Pakistan Road Transport Board, 1 Mozang Road, Lahore (Pakistan), within 15 days of the publication of this notice.

CHRISTCHURCH, HANTS  
(FRONTING MAIN LINE)

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## N.Z. HAULAGE FEAT

## Comet Lorry Fords Rivers

A DIFFICULT haulage job in New Zealand has recently been completed by W. Whittaker, Limited, of Christchurch, who carried building materials for a new hotel near the 12,349-ft. high Mount Cook in a Leyland Comet diesel lorry. The whole job necessitated three 460-mile round trips over very difficult country and in



In a 1,380-mile haulage task in New Zealand, much of it this kind of going and half of it fully laden, this Leyland Comet suffered only one broken spring leaf and averaged 10 m.p.g.

which several rivers on the route had to be forded as the vehicle, even unladen, was too heavy for the bridges.

On one occasion when fording a river, water penetrated the cab but did not stop the Comet. The only mishap during the entire operation was a broken leaf in one rear spring. Despite the hard conditions, the Comet returned an average overall fuel consumption of 10 m.p.g. and an unladen consumption on the return trips of 18 m.p.g. Total consumption of lubricating oil for the 1,380 miles was only one quart.

## SYNTHETIC BLIMP

## Helium Loss Halved

A non-synthetic envelope on a navy blimp has reduced helium loss by half during four months of testing, according to officials of the U.S. Navy's Bureau of Aeronautics. The envelope consists of two layers of Du Pont Dacron polyester fibre, with an inside coating and binding layer of neoprene and an outside coating of aluminised Du Pont Hypalon synthetic rubber. Total weight of the rubber-and-fabric laminate is approximately 15.5 oz. per sq. yd.

The new covering is said to be dimensionally stable, extremely strong and durable, and to resist attack by weather, sunlight and mildew. Dacron gives the fabric strength, durability and dimensional stability, while neoprene provides impermeability. The exterior coating of Hypalon gives the covering a high degree of abrasion resistance and immunity to the deteriorating effects of oxygen, ozone and sunlight. In addition to the important savings in cost of helium, another advantage is the greater load of fuel and equipment made possible by the lightness of the newly developed fabric. Tests with additional envelopes of similar construction are planned.

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WEEDKILLER

## New Borax Consolidated Product

LIQUID Monobor Chlorate, a new economical non-selective weedkiller introduced by Borax Consolidated, Limited, is considered to be an advance over previous mixtures of sodium chlorate and inert fire retardants, both as regards to safety and weedkilling effects. It is a combination of sodium chlorate and sodium borates in liquid concentrate form, in which the fire risk normally associated with chlorate weedkillers is effectively suppressed by the borates which are themselves potent weedkillers. Monobor Chlorate is especially suitable on paths, parking areas, roads and rail beds and there is no harmful effect on tarmac, concrete or paving stones.

Application costs are low as it can be easily diluted with water and applied with conventional spraying equipment. Recommended application is ½ gal. of the concentrate to 100 sq. yd., but the quantity will have to be increased to eradicate well-established weeds and grasses. In most conditions, the heavier the rate of application, the longer the period of control. Monobor Chlorate is officially approved by the Ministry of Agriculture and by the Department of Agriculture for Scotland and is available in drums containing 5, 10 or 20 gal.

## PERKINS FOUR 99 DIESEL

(Continued from page 7)

similar vehicle has been operated by St. Cuthbert's Co-operative Association, Edinburgh, on frequent-stop delivery work, in which it is reported to have returned an average of 38 m.p.g. compared with about 15 m.p.g. from a petrol-engined vehicle on the same work. Independent R.A.C. tests of cars fitted with the Four 99 under normal driving conditions over a 218-mile route have resulted in averages of 56.6 m.p.g. at 34.8 m.p.h. in a Vauxhall Velox and 50.8 m.p.g. at 34.7 m.p.h. in a Ford Consul.

Because of its compact size and light weight, the engine can be accommodated in a wide variety of vehicles with a minimum of modification. Complete conversion sets to replace existing petrol engines are offered by F. Perkins, Limited, for several current cars and for the 1955-56 Bedford 12-cwt. van, the Austin 152-series van and the Morris-Commercial J2 van. Sets for other vans, including the Ford Thames 12-15 cwt. series, are now being prepared. The Four 99 is already being supplied for installation as first equipment in Beardmore Mark 7 taxicabs, in which it is said to be providing an average fuel consumption of up to 36 m.p.g.—or only half that of petrol-engined cabs engaged on similar work in London. The home market price of the bare vehicle engine is £176 5s. while the prices for conversion sets are £207 10s. for the Bedford CA van and £218 9s. 6d. for the Austin Omnivan.

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## RAILWAY SIGNALLING

### Presidential Call for Standardisation

#### PROBLEM OF ADEQUATE STAFF

THE 45th annual general meeting of the Institution of Railway Signal Engineers was held in London recently, with the retiring president, Mr. A. W. Woodbridge, in the chair. After adoption of the report and accounts, he announced the council's awards for the two best papers read before the institution in London during 1957. The first prize was shared by Messrs. J. Gerrard and J. R. Walters for their joint paper on "The Corrosion of Underground Lead-Covered Cables," and the second prize went to Mr. D. C. Webb for his paper "Automatic Operation in Marshalling Yards."

The council for 1958, resulting from the ballot, was announced by Mr. Woodbridge, as follows: President, Mr. J. F. H. Tyler; vice-presidents, Messrs. D. G. Shipp and W. Owen; members of council, Messrs. J. P. Coley, C. G. Derbyshire, J. S. S. Davis, R. A. Green, H. W. Hadaway, F. G. Hathaway, L. J. M. Knotts, E. A. Rogers, J. Sulston, A. F. Wigram, B. H. Grose, O. H. Hoffman, M. Le Sueur, F. Mann, A. E. Walker and A. E. Williams. Following Mr. B. Reynolds' resignation of the honorary treasurership, Messrs. C. F. Burton and Company had been appointed treasurers and had accordingly resigned from their position as the institution's auditors. Mr. K. W. Baynes, A.C.A., was elected auditor. The new president, Mr. J. F. H. Tyler, assumed the chair and a very cordial vote of thanks was accorded to Mr. Woodbridge for his services as president.

#### Should Cost be Criterion?

In his inaugural address Mr. Tyler, who is the assistant signal engineering officer on the British Railways Central Staff, said that the railway signal engineer had at his disposal today technical means which would enable more traffic to be moved over fewer tracks in greater safety than ever before. Why, then, was the introduction of modern multiple-aspect signalling, operated from control panels, justified only by electrification or exceptional traffic conditions? The answer, bluntly, was cost and a certain lack of appreciation of the full benefits to be derived. He did not suggest for one moment that costs were high for what was being obtained, or that apparatus or methods were other than of the highest standards. What he did suggest was that, as a matter of urgency, methods should be examined to see whether the present path had been followed too long. It was time to say that semaphore signalling, oil lights and mechanical locking frames—although not necessarily mechanical locking—were out-of-date.

The first thing to be recognised was that modern multi-aspect signalling, by whatever means it was operated, was a safeguard which should be accepted without question and, at least on the trunk routes, without financial justification. The density of traffic in this country—and of the fogs—was greater than anywhere else, and late running in bad weather would only be eliminated by properly sited colour-light signals and automatic train control.

The second thing for consideration was the centralisation of control. In Mr. Tyler's view, there was no doubt that the practical operating limit was related, in the ultimate, to the stretch of line which would normally be presided over by one traffic controller, and it might even be possible, with a little thought, to increase his area. To think in these terms, at the present time, was quite unrealistic, by reason of the inadequate return on the high capital cost. Reduce the cost, and maybe the return would justify the scheme. Couple that with an acceptance of the finance required to maintain the goodwill of the customer by good timekeeping under all conditions, and there would be a new outlook towards modern signalling.

#### All-Regional Standards

The Institution, in co-operation with the British Transport Commission, had established a miniaturisation committee charged with the examination of new methods to see whether costs could be reduced by breaking away from traditional British practice. The aim should be so to reduce costs, that mechanical operation was no longer cheaper than power. One of the surest ways of keeping the costs of an installation to a minimum was to do it quickly, with experienced staff. They

should aim at all-regional standards, based solidly on principle, practice and mechanical design, in that order, and these should apply whether work was carried out by a contractor or by railway staff. Standardisation, by itself, would result in not inconsiderable economy by enabling planning and installation to be carried out more quickly. There would also be indirect economies resulting from staff being immediately effective after transfer from one region to another. Staff would have knowledge of all installations, not only those upon which they had been directly engaged.

To achieve standardisation, first principles must obviously be settled in conjunction with the operating and motive power departments. Once the principles were established, the settling of practice could be proceeded with, although that did not mean that the one must be completed before starting the other. At present the practice in regard to circuits varied from region to region and, in contract work, from system to system, which meant that five or six ways existed of doing exactly the same thing. Each job was tailor-made, necessitating the preparation of an interlocking and control table in considerable detail and wiring diagrams in complete detail. It followed that, if setting out to resignal trunk routes in a reasonable time, the planning time must be drastically reduced, or technical staff would be required in impossibly large numbers. The president described the unit system of circuitry which he felt ought to be concentrated upon and adapted to British signalling principles, in order to make progress.

#### Interchangeability

Standardisation of design must not become a fetish, as there was no point in standardisation for its own sake. Manufacturers must not be unnecessarily restricted by insisting on absolute uniformity for every piece of apparatus, but it was only common sense to avoid having to hold stocks of material applicable only to one particular system or installation. Interchangeability was the most important requirement. It must not be overlooked that, as requirements were comparatively small, the benefit of mass production in reducing cost would only be gained if a common standard were adopted.

Mr. Tyler outlined some of the ways in which a saving in the cost of production of essential items could be achieved. In all fields today, there was a trend towards lighter and smaller designs, resulting from improvements in materials and methods of manufacture. With few exceptions, signalling apparatus design had changed very little, broadly speaking, since the earliest days, and we should concentrate on designing equipment on more modern lines, making it smaller and less costly.

#### Recruitment

Great difficulty was experienced at the present time in recruiting sufficient technical staff of suitable calibre to cope with the modernisation plan. Although an absorbingly interesting subject, there was a lack of technical literature on modern railway signalling. Was it realised that the only technical work of recent years was now out of print? The signal engineer's work needed to be publicised on a larger scale, so that the profession was not regarded as a closed shop or a dead-end job—neither of which was correct. Somehow they should see that the university undergraduate and the technical college student considered making railway signalling their chosen profession.

Quite obviously related as it was to electrification and dieselisation, the signalling side of the modernisation plan could not be delayed whilst the signal engineers reviewed all their methods. It must continue to go ahead as quickly as possible on the basis of the existing apparatus and systems; but, in Mr. Tyler's view, a few of the best technical men should be set aside to study the whole question of signalling principles, practice and design, with the remit to produce British Railways standards, taking every advantage, in co-operation with the manufacturers, of modern materials and methods of manufacture. He realised what that meant in the present shortage of experienced technical staff, but if it was not done that way, progress would not be fast enough to affect later stages of the plan.

## Shipowners and Rail Wagon Demurrage

### CHARGING THE WRONG PARTY

RAILWAY wagon demurrage is dealt with at some length in the annual report of the Liverpool Steam Ship Owners' Association. It states that the shipowner should not be expected to pay for the detention of wagons which, under port arrangements, he does not control, or, indeed, receive or handle.

The report adds the view that "the liner companies do not cavil at being the recipients of claims for demurrage when wagons are detained beyond the free period for their convenience or when the detention was within their power to avoid. They are by no means unappreciative of the fact that, compared with prewar, turn round of railway wagons is poor and calls for improvement and, where needed, imposition of penalty for detention. The British Transport Commission for its part has said that demurrage is not regarded as a source of revenue but as a deterrent and an aid to improvement."

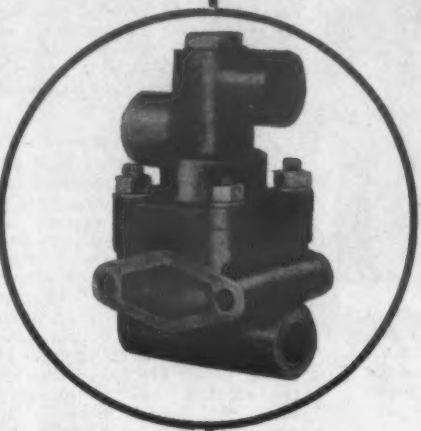
"This is fair enough, but it should not be debited to someone who has neither control over the wagon nor responsibility for its detention. The Commission should hold accountable the actual delinquent even although, in its own ports, it may mean looking to itself. Where, as in Liverpool, the liner companies receive the wagons, the 'list of circumstances,' properly applied, should give the answer. That list, it will be remembered, is one which entitles the shipowner in receipt of a demurrage account to claim circumstances of force majeure in answer to it. The troubles that have attended its past

application have not been attributable to any defect in it, but to too rigid administration without sufficient regard for local conditions. Indeed, as the association has so often stressed, it is on local conditions in the different ports that the whole question largely turns. The Commission has during all these years insisted on dealing with it centrally. This fact has lain at the root of all the trouble it has given."

"In the port of Liverpool, which is the association's principal concern in the matter, the association believes that a change of outlook over centralisation would speedily be productive of agreed and acceptable terms for Liverpool. Further, it is in the different ports that can best be tested and met the main contention of the general council's committee that wagon demurrage in the ports should be a penalty for default, falling where the default lies and not on one who is innocent of default. As between, for example, London, Liverpool, Newport and Glasgow, conditions in relation to the reception and discharge of wagons vary considerably and the extent of application of the argument varies with them. Hence the need for local examination of the circumstances by the two sides and for arrangements which in each of the ports concerned will take fairly into account the conditions ruling in each of them. On these lines it is certainly not an insoluble problem. The experience of the last 20 years has shown that it will remain a continuing trouble so long as these considerations continue to be ignored."

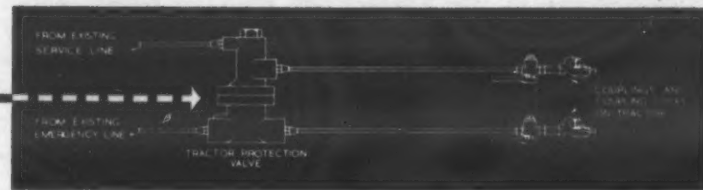


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## MODERN AIRWAYS and COMMERCIAL AVIATION SECTION

## BY BRITANNIA TO CHICAGO

B.O.A.C. Extends Use of 312s

## THE COMFORT OF THE TURBOPROP

HAVING, since last December, operated a weekly flight with Bristol Britannias between London and New York the British Overseas Airways Corporation has, with the delivery of further 312s, extended its transatlantic operations with this type. From April 17 they took over the London—Montreal—Detroit—Chicago service from the Douglas DC7Cs which

mission on its way to Canada. The power of the Proteus 755 engines is such that we took off comfortably without the machine having to be hurried off in the face of a rapidly diminishing length of runway and thereafter we turned on to a direct course for Newfoundland. The winds were for a long time all that had been forecast with their speed at periods up to 80 m.p.h. When, however, we had been flying some 5½ hr. they showed signs, if not of weakening, at least of backing and this made it possible to determine upon flying through to Montreal rather than putting into Gander. Our ground speed, which had been of the order of 290 m.p.h., began to increase steadily and the last hour or so from Moncton to Montreal over Northern Maine, which was still liberally covered with snow, saw the figure at 325-330 m.p.h.

## Headwinds Overcome

In the upshot the check-to-check time from Prestwick to Dorval Airport, Montreal, was 10 hr. 29 min. as against the 10 hr. 25 min. scheduled and this was undoubtedly a very satisfactory performance indeed in the circumstances. Had it been possible to take off from Prestwick with full load, the captain could have cruised at higher power and saved time on the schedule, but he obviously took the wiser course. By agreement between Canada and the United States the health and immigration formalities for the latter are carried out at Dorval and these were praiseworthy brief. Thereafter we were free to wait in the passenger lounge. This is somewhat cramped as also is its counterpart for domestic services, but work is proceeding steadily on the new terminal building and that should do much to relieve the situation, even if there are already fears that it may not be adequate for long.

The next leg of the flight, from Montreal to Detroit, occupied nine minutes more than the scheduled allowance, but this was due largely to the aircraft, now commanded by Captain Stead, having to wait while two aircraft landed after having been given permission to start engines and proceed to the runway to take-off. Luncheon and subsequently tea had been served between Prestwick and Montreal and a dinner as excellent as the previous meals appeared between Montreal and Detroit. Both Wayne Airport, which serves

Detroit and Windsor, and O'Hare, serving Chicago, are new so far as civil use goes and buildings are not yet finished. Both should be markedly more comfortable than those at the older airports and Midway Airport, Chicago, in particular, suffers from extreme congestion in its buildings and in its air traffic. We cut five minutes off the time allowed for the Detroit—Chicago sector as some atonement for an over-long stop at Wayne. This was brought about by the absence of some ground equipment ordered in the United States but not then delivered—there may be a lesson in that for those who maintain that it is always the British who make belated deliveries.

## Is Prestwick Necessary?

On the outward flight from London the seating layout of the aircraft comprised 12 de luxe class seats, right aft, 17 tourist class seats and 42 economy class, and the load factor in terms of passengers was approximately 64 per cent as far as Montreal. Rather, we must confess, to our surprise, we carried some 16 passengers from London who went only as far as Prestwick, but our loss was more than balanced by the number joining there. The question of the Prestwick call is a vexed one. There is no doubt that it is thoroughly unpopular with those travelling to and from London but, on the other hand, the airport does generate quite substantial traffic which would otherwise go by competing operators such as S.A.S., T.C.A. and K.L.M.

Returning from Montreal to London on the balancing flight a week later we found that, by one of those coincidences which are so frequent in air transport, the aircraft was the same one as we had had the previous week—G-AOVH. As we drove out from Montreal to Dorval Airport we saw the unmistakable Britannia in the circuit preparatory to landing and were a little shaken having seen it descending to observe almost immediately a Britannia in the circuit again. This, as we learned when we arrived, was another engaged in crew training. The service machine had brought the British trade mission out to Canada and the seating arrangement had been changed from that of its previous trip. The number of de luxe class seats had been increased by eight installed where the tourist class had previously been, while the tourists had been moved into what had previously been the forepart of the economy class cabin. This reduced the passenger capacity to 70 and all the seats were occupied. On the outward flight there had been quite a number of passengers with small children and walking through the economy class section of the aircraft called at times for particular care not to tread on any of them. There were some children also on the return flight, but definitely fewer in number and more widely spread between the classes.

The weather forecast available at Montreal indicated that the very strong and gusty wind, which had been dismounting pedestrians' hats in

the city, was likely to follow us out over the Atlantic and the flight plan provided for a great circle course to Prestwick over Goose with an estimated flight time of 8 hr. 5 min. as against the scheduled time of 9 hr. 5 min. In the event the winds were all that had been promised and more, and for some time during the night the Britannia, which was commanded by Captain Wellwood, had a tailwind of 125 m.p.h. The result of this was to bring our ground speed up to the 500 m.p.h. mark and there was also a danger that the reduced fuel consumption would bring us to Prestwick with a greater than permitted all-up weight for landing. It became necessary, therefore, to obtain permission to descend earlier than would normally be the case and we also indulged in several tours of the circuit before going in to land. The time from take-off to overhead Prestwick was 7 hr. 31 min. which was good enough in all conscience.

## Changing the Clock

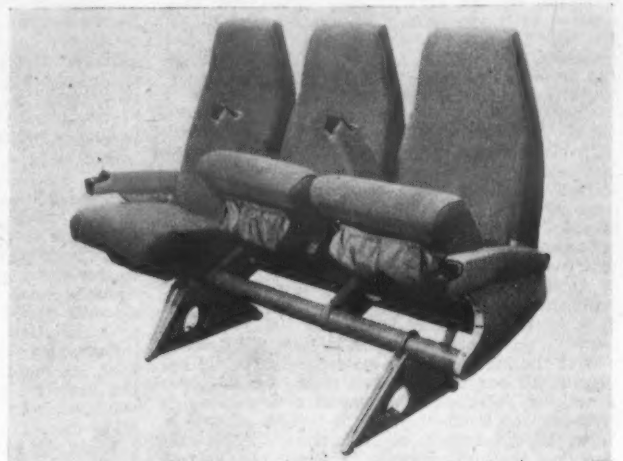
Dinner is served on the flight at what is a fairly reasonable hour for those who have been accustomed to the North American habit of dining early and it is only when one makes the time adjustment to relate it to what faces one in the British Isles that it dawns upon a brain made placid, if not somnolent, by an enjoyable meal that the time is 2.30 a.m. Breakfast is served on the ground at Prestwick where the aircraft is scheduled to stop for 45 min., but this might well have to be hurried if customs and immigration processing takes as long as it did for us. In fact, the aircraft was there for an hour, but since the onward flight to London took only 1 hr. 7 min. instead of the 90 min. allowed we



Passengers on the first B.O.A.C. Britannia-operated service to Montreal, Detroit and Chicago, included, left to right, Mr. Gilbert Lee, general manager, western routes, B.O.A.C., Mr. Basil Smallpeice, managing director, B.O.A.C., and Sir Matthew Slattery, chairman and managing director, Short Brothers and Harland, Limited

have been maintaining it twice weekly, and by the end of May the Britannias will have built up to a daily frequency, with three flights each way calling at Prestwick. The inaugural flight, on which we were able to travel, was one of those occasions when the fates were seemingly joined in unkind conspiracy. The take-off from London was 40 minutes late due largely to congestion on the ground and in the airways and the only consolation was that, had we been much earlier, we should not have been able to get into Prestwick anyhow due to weather. The work on the main runway extension there presents a further problem since the limitations of those available can affect the potential fuel load of the aircraft.

Strong headwinds were forecast and Captain Sherwood, who was in command of G-AOVH, thought it highly probable that we should need to call at Gander to refuel—an occurrence which befell the corresponding flight on April 24 with a load of passengers including the British trade



Chairs for tourist and economy class accommodation in Britannias are produced by Aircraft Furnishing, Limited

still managed to achieve an arrival 18 min. early at London Airport.

After flying the Atlantic in each direction by Britannia it is right to endeavour to sum up the impressions one gained of this aircraft and the reactions of other passengers with whom we flew. The increased length in comparison with the Britannia 102s operating on the shorter B.O.A.C. (Continued on page 16)

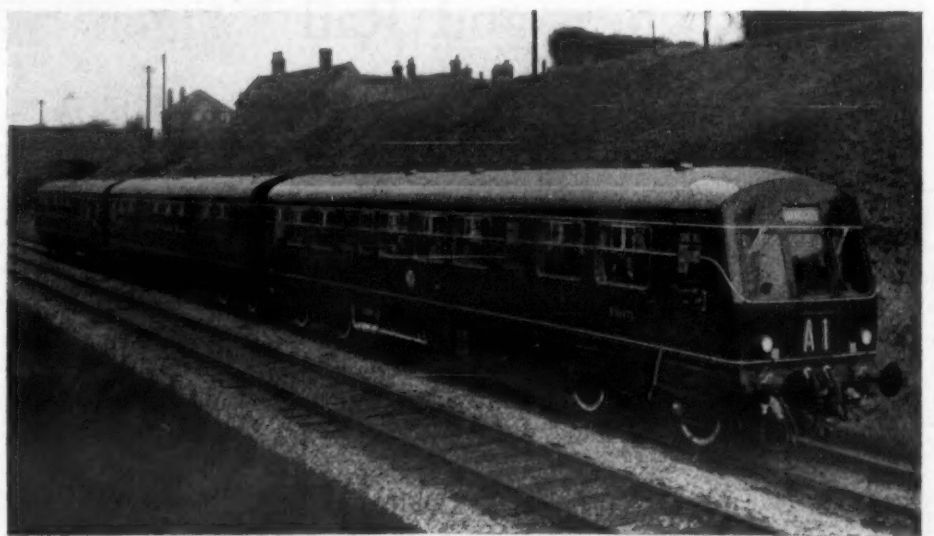
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#### Permanent Cab Notice Labels

PERMANENT cab notices, for example, warnings about unauthorised passengers and special instructions to drivers, engraved on non-inflammable plastics labels, are now available from the maker, Clarke and Company, Roschall Avenue, Sutton, Surrey.

#### Condensed Touring Guide

AVAILABLE free from Trico-Folberth, Limited, Great West Road, Brentford, Middlesex, is a most useful condensed Continental driving guide designed to clip on to a sun visor; clips

is started by engaging a screwdriver in a notch or slot provided and finished by hand. Compared with many conventional retaining devices, Spirolox is claimed to give reduced machining requirements, faster assembly time and suitability for mechanical assembly, saving of weight, greater security due to firm and full circumferential pressure, neatness of appearance and improved dynamic balance when used on rotating shafts. A brochure describing the new rings is available from Wellworthy, Limited.

#### Three Gearboxes for Tiger Cub

THREE type of transmission can now be fitted to the underfloor-engined Tiger Cub bus and coach chassis manufactured by Leyland Motors, Limited. Standard at present is the Albion five-speed constant-mesh gearbox, with the semi-automatic Pneumo-cyclic gearbox as an alternative. Previously this could only be offered to overseas users but can now be fitted to Tiger Cubs for the home market following changes in ground clearance regulations. The latest gearbox to be made available for the Tiger Cub is the well-known Leyland four-speed synchromesh unit.

#### Crompton Parkinson Service

TO facilitate efficient stores distribution in the London area, Crompton Parkinson, Limited, is opening an additional stores and trade counter for batteries, cables, lamps, lighting fittings and small motors, at College Gardens, London, N.18. (Telephone No. Edmonton 7141.) The new stores will serve all N., N.E., E. and N.W. postal



A centre loading height of only 3 ft. 3 in. has been achieved in this Glover Webb and Liversidge canted platform body on Dennis Pax II petrol-engined chassis; right, a 2,000-gal. tanker on A.E.C. Mercury chassis for Shell-Mex and B.P. by Bonallack and Sons, Limited, represents this 133-year-old company's entry into the road tanker field

are provided. Printed on stiff card, the guide contains at-sight conversion tables for eight European currencies, temperature, miles-kilometres and English-metric tyre pressures, liquid measures and fuel consumption rates as well as other helpful information.

#### High Speed Tyre-Testing Machine

A STEADY rise in the speeds at which records are being broken made tyre testing a continuing story. Mr. G. E. Beharrell, chairman of the Dunlop Rubber Co., Limited, said recently when he received the R.A.C. Dewar award for the company's work on disc brakes and tyres. Mr. Beharrell described a new high-speed machine capable of testing tyres at speeds of up to 650 m.p.h. which is being built at Fort Dunlop and will be in operation this year.

#### Increased Power for Caterpillar

INCREASED power for Caterpillar DW20 and DW21 rubber-tyred tractors has been announced by Caterpillar Tractor Co., Limited. Both vehicles are now to be fitted with the Super-Turbo diesel engine, which has a maximum output of 320 b.h.p., giving increased maximum rimpull and a 12 per cent higher travelling speed—22.6 instead of 20.5 m.p.h. on DW21 and 35.8 instead

of 32.1 m.p.h. on DW20 tractors. New bevel gears and pinions have been incorporated to handle the increased torque.

#### Bedford Light Vans in Colour

HITHERTO supplied only in black primer finish, Bedford light vans are now leaving the Luton factory painted in bright attractive colours or in light-grey primer. The new finish colours are red, blue, grey and beige, and are applied to both the exterior and interiors. They add only £12 10s. to the retail prices of £512 18s. 9d. including tax, in the case of the 10-12 cwt. van, and £521 1s. 3d. in the case of the 15-cwt. van. To match the new paint, tan upholstery now replaces the former dark brown seat coverings.

#### Plastics Foam Progress

RESILIENT plastics foam has been developed into reliable furnishing material no longer subject to the criticisms levelled at it in the earlier stages of development. It is becoming increasingly the preferred material for aircraft and bus seating and armrests and in situations where



The whole of the front, large cab roof, engine cowling and instrument panel of this H.C.B. Engineering fire appliance body are of structural plastics employing British Resin Products Cellobond polyester resins; right, this Smith-bodied mobile savings bank on Carrier Bantam chassis is one of three operated by Banco Continental in Peru

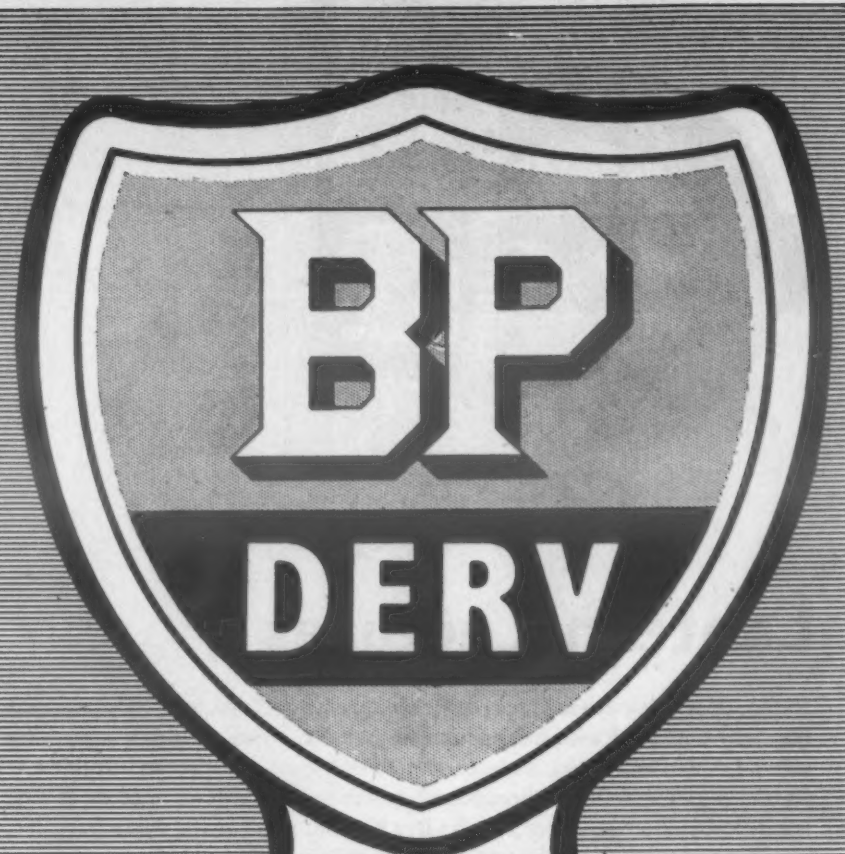
its advantages of light weight, virtual indestructibility and imperviousness to most forms of attack are at a premium. The material pioneered by Kay Brothers Plastics, Foamoprene, is now available commercially in a variety of densities and colours in thickness from  $\frac{1}{8}$  in. to 12 in., in widths up to 3 ft. and in lengths up to 18 ft., which can be exceeded in special cases. A still lighter weight profiled Foamoprene is now available as are individual reversible cushions made of the new material.

#### New Servicing Literature

THREE new publications produced by Cryton Equipment, Limited, Bridgwater, Somerset, focus attention on recent developments in motor-vehicle servicing. The titles are: *The Importance of Service, Presenting Performance Service and Performance Service Equipment*. Although produced primarily for the garage and vehicle fleet operator, they will be of interest to anyone connected with servicing in the motor industry. The three brochures are complementary and the theme is simple and direct. Since the modern engine has become so complex and critical in design, it is now essential to maintain original factory standards of adjustment in service if maximum performance and economy are to be retained. It is suggested that this can only be done satisfactorily by using modern electronic tools.

#### Improved Retaining Ring

BENEFITS in many engineering applications are likely to accrue from the use of Spirolox retaining rings, which are now being manufactured in this country by Wellworthy, Limited, Lynton, Hants, under licence from the Ramsey Corporation, U.S.A. Spirolox rings comprise two turns of flat spring steel formed into a continuous helix and can be in-springing or out-springing. They are concentric, without projecting ears or lugs and can be fitted and removed without special tools. Fitting can be done by hand and removal



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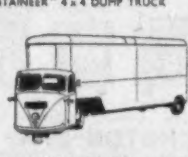
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Air pressure supplied by compressor mounted on motive unit and driven from the power take-off.

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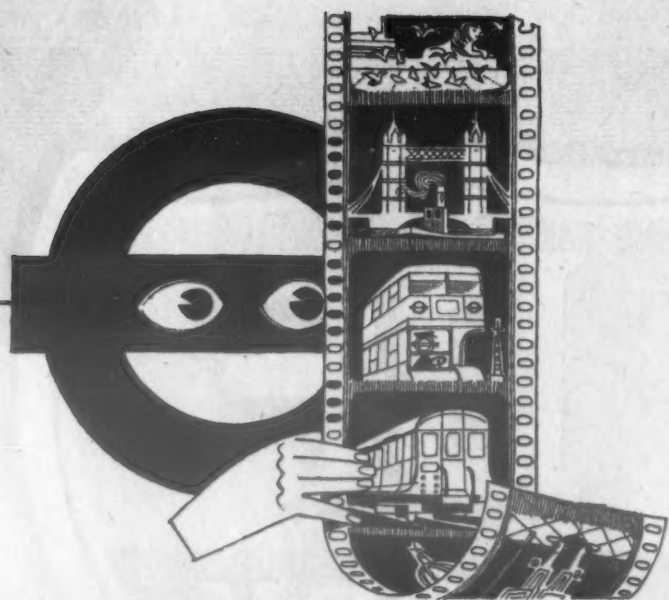
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## Lantern Lectures

In the series of lantern lectures prepared by London Transport, entertainment has been combined with information so that Londoners can learn something about London and its countryside, as well as the organisation and working of its transport system. It has been found, however, that these lectures are of very considerable interest to people who live in other parts of the country.

There are some 50 illustrations for each lecture and these are sent either as 3½ in. slides or on a 35 mm. film strip. There is no charge for the loan of the texts or of the slides or film strip; the only expense to the borrower is the return carriage of slides, or the return postage on the film strip.

You can choose from this list:

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55 BROADWAY WESTMINSTER S.W.1. Telephone ABBey 5600 Ext. 407



## THE BRITISH COACH RALLY



Second in Class A of the concours of the British coach rally at Brighton ("Modern Transport," April 26) was this Plaxton-bodied Bedford of Comfy Coaches, Farnham, while Mr. G. R. Bell, its driver, also won an award; right, the 14-seat Karrier of Mini Coach Tours, Limited, with Reading body which won Class A



Seen commencing the climb to Devils Dyke from the north, this Duple-bodied Bedford of W. Davis and Sons (Sevenoaks), Limited, was driven by Mr. G. Taylor, winner of the coach driver of the year trophy and award, the vehicle thereby gaining the Capasco trophy



Mr. Ben Goodfellow, general manager, Sheffield United Tours, Limited, Mr. A. Wilson, the driver, and Mr. R. Burgin, chief engineer, S.U.T., pose with their trophies in front of the A.E.C. Reliance with Plaxton Panorama body which was the overall winner of the rally; the comprehensive toolkit for Continental touring of the South Wales Transport A.E.C. Reliance with Weymann Fanfare body



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## SOCIAL AND PERSONAL

### North Eastern Region Reorganisation

**F**OLLOWING the appointment of Mr. A. R. Dunbar, assistant general manager, North Eastern Region, British Railways, to the position of manpower adviser to the British Transport Commission, the organisation of the North Eastern Region is to be revised. The present positions of assistant general manager and chief traffic manager will be abolished and in their place there will be an assistant general manager (traffic) and an assistant general manager (administration). The assistant general manager (traffic) will embrace responsibility for traffic matters formerly undertaken by the chief traffic manager. Mr. F. C. Margetts, chief traffic manager in the North Eastern Region, has been appointed to the post of assistant general manager (traffic) with effect from April 21. An appointment to the position of assistant general manager (administration) will be made shortly.

The late Mr. F. W. Plaxton, proprietor of Plaxtons (Scarborough), Limited, left £181,308 (duty paid £85,505).

Mr. A. Peck has been appointed manager of the distribution department of the Mobil Oil Co., Limited. He joined Mobil in 1946, spent his first three years with the company as a special representative at Manchester and Sheffield branches and then was branch sales manager in Cardiff. In September, 1955, he became assistant to the industrial sales manager and in December, 1956, he moved to the position of manager of consumer fuels department. In this position he has been responsible for co-ordinating the company's sales activities in the consumer fuels market, which includes the sale of Mobilgas, Mobil Diesel and Mobil Gas Oil to motor transport operators and industrial concerns.



Mr. A. Peck

At a ceremony during a banquet in the Dorchester Hotel last week, Lord Nuffield was presented by H.R.H. the Duke of Edinburgh with the Golden Heart, highest honour of the Variety

Mr. G. M. Newton has been elected to the board of the British Vacuum Cleaner and Engineering Co., Limited.

Mr. F. R. Squires has been appointed to the post of manager of retail divisions of the Mobil Oil Co., Limited.

Mr. Reginald Hall, LL.B., has been appointed deputy chairman of the West Midlands area Traffic Commissioners and deputy Licensing Authority with effect from May 2.

Mr. L. E. Willson, hitherto manager of the Southampton office of the Skefko Ball Bearing Co., Limited, has been appointed an assistant sales manager at the head office in Luton.

The annual conference of the Road Haulage Association is to be held this year at Torquay on October 13-15. The annual luncheon of the association takes place at Grosvenor House on May 13.

Sir Leonard Sinclair, chairman of Esso Petroleum Co., Limited, has relinquished his position as director of the Irish subsidiary, Esso Petroleum Co. (Ireland), Limited.

Mr. Richard Nugent and Mr. Airey Neave, Joint Parliamentary Secretaries to the Ministry of Transport and Civil Aviation, have appointed Mr. R. W. Elliott, M.P., as their Parliamentary Private Secretary.

Mr. H. C. Johnson, O.B.E., general manager of the Eastern Region of British Railways, has been appointed a member of the British Railways Productivity Council. He succeeds the late Mr. C. K. Bird, former general manager of the Eastern Region.

Mr. D. S. Dodsley Williams, A.M.I.Mech.E., editor of *The Oil Engine and Gas Turbine*, has been awarded the Percy Still Medal by the Diesel Engineers and Users Association for his paper "Engine Evolution: Non-Marine Engines over a Quarter of a Century."

Mr. T. H. Summerson, chairman, and members of the North Eastern Area Board, together with Mr. A. R. Dunbar, assistant general manager, North Eastern Region, and departmental officers, recently visited installations in the Tees-side area. At various places on their tour they met local railway officials and members of the staff. Our illustration shows Mr. F. H. Petty, regional motive power superintendent, explaining a point to the



Mr. T. H. Summerson (second from left), chairman of the North Eastern Area Board, at Thornaby-on-Tees (see paragraph accompanying)

Clubs International, for his outstanding service to humanity in the role of philanthropist. Since 1926, it was stated, his benefactions have totalled £27 million.

At the annual general meeting of the Aluminium Development Association Mr. S. E. Clotworthy (managing director of the Northern Aluminium Co., Limited) was elected president for 1958-59. Dr. Maurice Cook (chairman of the I.C.I. Metals Division) was elected vice-president. The new chairman of the executive committee is Dr. N. P. Inglis (research director, I.C.I. Metals Division).

The council of the British Institute of Management has elected the Earl of Verulam, J.P., as chairman designate. He is chairman of Enfield Rolling Mills, Limited, Engineering and Lighting Equipment Co., Limited, and Sernol, Limited. At the annual general meeting of the Institute on July 23 he will succeed Mr. Harold Wilmot, chairman and managing director of Beyer, Peacock and Co., Limited, who retires at the end of his two years of office.

Mr. Robert L. Lickley, technical director and chief engineer of the Fairey Aviation Co., Limited, has relinquished the latter of these two appointments. Dr. G. S. Hisslop, formerly chief designer (helicopters), is appointed chief engineer (aircraft), and Mr. L. R. E. Appleton (formerly head of guided weapon design and development) is appointed chief engineer (Heston). They will both be directly responsible to the technical director.

The London Midland Region of British Railways announces the following appointments:

Mr. L. D. Taylor to be assistant motive power officer, Euston.  
Mr. H. Geoghegan to be district goods manager, Bolton.  
Mr. S. W. Smith to be traffic assistant to divisional traffic manager, London.  
Mr. A. H. Williams to be traffic assistant to divisional traffic manager, Liverpool.  
Mr. T. C. Lawrenson to be general assistant to manager (Irish Shipping Services), Euston.  
Dr. J. T. Cress to be area medical officer, Derby.  
Dr. G. E. J. Porter to be area medical officer, Manchester.  
Dr. H. H. Whincup to be area medical officer, Liverpool.

At the annual general meeting of the Railway and Canal Historical Society, Mr. M. I. Berrill was elected hon. secretary and Mr. F. G. M. Watson hon. treasurer. Mr. C. R. Clinker was re-elected president. The meeting was held in Croydon and Mr. Charles E. Lee had previously led an inspection of relics of the Surrey Iron Railway (the world's first public railway) and of the Croydon, Merstham and Godstone Railway. On the following day the southern end of the former Grand Junction Canal, from Uxbridge to Brentford, was inspected by a party to which Mr. E. C. R. Hadfield acted as guide.

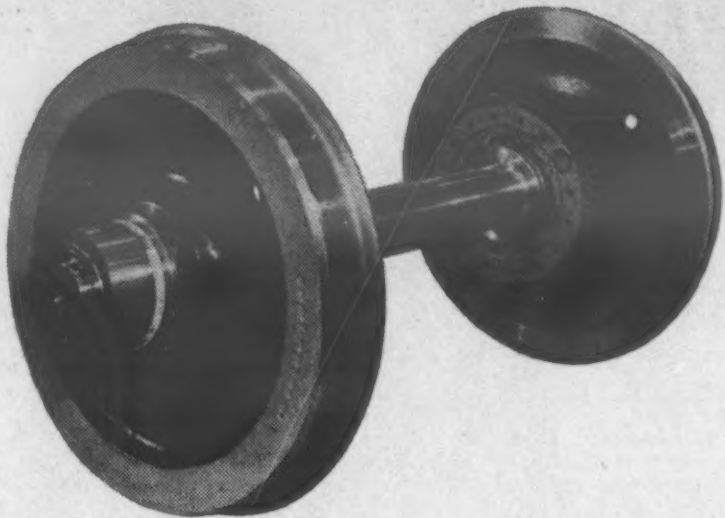
chairman and Mr. Dunbar in regard to the new motive power depot now nearing completion at Thornaby-on-Tees. Included in the group are, reading left to right: Messrs. A. R. Dunbar; T. H. Summerson; F. H. Petty; Colonel J. S. B. Gentry, general manager, Tees Conservancy Commission; L. H. McRobert, and Dr. A. S. Armit, members of the area board.

Mr. U. Meretz, Assistant Controller of Road Transport in the Israel Ministry of Transport, has returned to Israel after spending 20 months in the United Kingdom, where he studied various transport methods.

A greenhouse was the unusual retiring present chosen by Mr. A. Webb, former Central area superintendent at Preston, for Ribble Motor Services, Limited. It was given him by senior officers in all departments at Ribble headquarters, area superintendents and district traffic superintendents. Mr. Webb was the oldest-serving employee of Ribble and he was also presented with an engraved plate recording his 38 years' service with the company. His greenhouse was handed over in model replica form.

We record with regret the death of Mr. P. H. Muirhead, C.B.E., who, until his resignation for health reasons last January, was managing director of Vickers-Armstrongs (Engineers), Limited. He was a director of Vickers, Limited, and of other companies. Mr. Muirhead was 53 years of age. He joined the Elswick works in 1927, becoming manager of commercial products. In 1941 he was appointed a special director and in 1944 became deputy general manager, Elswick, Scotswood and Chertsey. He became director and general manager in 1945 and managing director (engineering division) of Vickers-Armstrongs, Limited, in 1953.

Mr. I. F. C. Beswick, A.M.I.Mech.E., hitherto mechanical transport officer, Ministry of Transport, at Edinburgh, has been appointed divisional engineer, North Western Division, British Road Services, in succession to Mr. W. H. Smith, who is now rolling stock engineer at B.R.S. headquarters. Mr. Beswick served an apprenticeship to motor engineering and was subsequently an instructor of aero engine fitting with the Air Ministry. In 1942 he joined General Motors, Limited, at its Preston plant and from 1943 to 1946 served with the Royal Electrical and Mechanical Engineers, being demobilised with the rank of captain. After a period as production engineer to a firm of manufacturing engineers, Mr. Beswick joined the motor transport branch of the G.P.O. at Manchester in 1948, and became divisional mechanical transport officer for the Ministry of Transport and Civil Aviation at Edinburgh in 1950.



## RAILWAY WHEELS, AXLES, TYRES, SPRINGS, FORGINGS

As one of the principal makers of steel railway materials in the Commonwealth, Steel, Peck & Tozer are playing an important part in the modernization schemes of British Railways and of railways overseas. Of their total production of 100,000 tons per annum of railway materials—steel wheels, axles, tyres, springs and forgings, and finished wheel and axle sets produced at the adjoining plant of Owen & Dyson Limited, some 30,000 tons are exported to railways in five continents. Seventy years' manufacturing experience and a constant search for new methods ensure the reliability and excellence of these materials.

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## IMPORTANT CONTRACTS

## Brazil Again Buys British

ONE of the largest bus operators in São Paulo, the Empresa de Ônibus Alto do Paraíso Limitada, has again ordered British buses from Leyland Motors, Limited, to expand its city and suburban bus fleet. The new contract placed through the Brazilian company of S.A.M.D.A.C.O., covers 40 Leyland Worldmaster underfloor-engined buses powered by 680-cu. in. diesels and equipped with semi-automatic Pneumo-Cyclic gearboxes. The 105 Leyland buses already in service are also underfloor-engined models. Stage carriage bodies for the new vehicles will be built in Brazil at the large bodybuilding factories of C.A.I.O. in São Paulo. They will be of aluminium construction with seats for 46 passengers.

## India Tyre Manufacture in Africa

Arrangements have been made for India tyres to be made under licence at the new Dunlop factory being built in Bulawayo. Manufacture is expected to begin early next year and will cover a full range of commercial vehicle and other tyres and tubes.

## Scottish Region Contracts

Recent contracts placed by the Scottish Region of British Railways include:

Clifton and Baird, Limited, Johnstone, for a rail sawing and drilling machine, Motherwell long rail welding installation.

Ferguson, Hughes and Co., Limited, Glasgow, for a 10-ton overhead electric travelling crane, Motherwell long rail welding installation.

Tangyes, Limited, Birmingham, for one axle journal re-turning and burnishing lathe, Townhill new wagon repair depot, Dunfermline.

## London Midland Region Contracts

The London Midland Region of British Railways has placed the following contracts:

S. and C. Walmsley, Limited, Liverpool, 10, for structural steelwork, extension to main goods shed, Ancoats, Manchester. Bosworth and Wakeford, Limited, Rugby, for additional bridge span for Liverpool Corporation road widening at Walton Lane.

Leonard Fairclough, Limited, Adlington, for alteration to bridges 3 and 17, Crewe—Stockport line, for main line electrification; for reconstruction of bridge and retaining wall at Slade Green Junction; and for alterations to platforms at Sandbach, Holmes Chapel, Goostrey and Chelford stations.

## Queen's Flight Herons

Two de Havilland Heron aircraft (XM 295 and XM 296) delivered to the Queen's Flight at Royal Air Force Benson recently brought the flight's number of this type to three. The passenger cabin of each of the latest aircraft is so arranged that it can be furnished either for eight passengers in two compartments or with 14 seats. The first Heron for the Queen's Flight, XM 375, was handed over to the Duke of Edinburgh in March, 1955, since when it has been in continuous use by the Royal Family.

## B.R. Electrification Contracts

The British Transport Commission has placed the following orders for electrical equipment for use in connection with the British Railways electrification programmes in the Eastern, London Midland, and Scottish regions:

Fuller Electric, Limited, London, E.17, for 132 switchgear equipments (power supply and feeder circuit breakers).

Switchgear and Cowans, Limited, Manchester, 16, for 256 switchgear equipments (power supply and feeder circuit breakers).

Bertram Thomas (Engineers), Limited, Manchester, 15, for 400 switchgear isolators.

New Switchgear Construction Co., Limited, Sutton, for 150 switchgear isolators.

Brentford Transformers, Limited, Crawley, for 75 voltage regulators.

Foster Transformers, Limited, London, S.W.19, for 75 power distribution and voltage regulating transformers.

Automatic Telephone and Electric Co., Limited, Liverpool, 3, for supervisory control equipment for remote control of switchgear on the Glasgow Suburban electrification.

Pirelli-General Cable Works, Limited, Southampton, for 6,500 yd. cable, with sealing ends and joints.

Johnson and Phillips, Limited, London, S.E.7, for 8,000 yd. cable.

W. T. Glover and Co., Limited, Manchester, 17, for 31,000 yd. cable, with sealing ends and joints.

Scottish Cables, Limited, Renfrew, for 12,800 yd. cable, with joints.

W. T. Henleys Telegraph Works, Co., Limited, London, E.C.4, for 30,000 yd. cable, with sealing ends and joints.

## TENDERS INVITED

THE following items are extracted from the Board of Trade Special Register Service of Information. Inquiries should be addressed, quoting reference number where given, to the Export Services Branch, Board of Trade, Lacon House, Theobalds Road, London, W.C.1.

May 14—Australia.—Victorian Railways for 10 900-1,000 h.p. DIESEL-ELECTRIC LOCOMOTIVES in working order, complete with all auxiliary and protective equipment, for maximum speed of 60 m.p.h. Tenders to the Secretary for Victorian Railways, Railway Administrative Offices, Melbourne, C.I. (ESB/10109/58).

May 19—Portuguese East Africa.—Ports, Railways and Transport Department for 56,400 GALVANISED RAIL BOLTS. Tenders to the Ports, Railways and Transport Department, Lourenço Marques. (ESB/9454/58.)

May 21—Formosa.—International Co-operation Administration for commercial vehicle TYRES and TUBES and various SPARE PARTS. Photocopies of tender documents from Export Services Branch, B.O.T., price 2s. (ESB/9601/58/ICA.)

June 4—Thailand.—International Co-operation Administration for four 3 cu. yd. DUMP LOBBIES complete, with 8-ton capacity hydraulic hoists. Tenders to the Procurement Office, Thai Technical and Economic Committee, 962 Krung Kasem Road, Bangkok. (ESB/10102/58/ICA.)



## RAILCAR PROGRESS

A comprehensive survey of diesel railway workings in Great Britain, Northern Ireland and Eire, dealing particularly with the modernisation programme carried out by British Railways

FREE ON REQUEST

## SHIPPING and SHIPBUILDING

## New Cunard Liner Delayed

CONSTRUCTION of the 28,000-ton Cunard liner which was to have commenced in the autumn to replace the motorship *Britannic* of 1930 has been postponed at the request of the future owners. Colonel Denis Bates, chairman of Cunard, states that "having been denied the means to make adequate provision for replacement during years of plenty, our endeavours are now frustrated by a lean period (gross profits last year fell by £2 million), which does not even permit us to make full use of the concession of increased investment allowance granted by the Chancellor for 1957." The new ship is due to be built at the John Brown yard on Clydebank, which has a three-year order book.

## New York—Montreal Water Route

THE Port of New York Authority has urged the U.S. Congress to authorise a Federal survey of a 450-mile inland water route between the Port of New York and Montreal on the Saint Lawrence River in Canada. It would replace a 1,700-mile New York—Montreal route via the Atlantic Ocean and the Saint Lawrence.

## Simplifying Travel

AT its last meeting the council of the Chamber of Shipping noted that some progress has been made after repeated efforts to persuade the Government departments concerned to dispense with the elaborate form of manifest which the passenger lines are required to produce voyage by voyage, and to bring the shipping practice into line with that used in connection with air passengers, i.e. a simple roll of passengers and their nationalities. It is hoped that before long an amending statutory instrument will be laid before Parliament.

## Nuclear Passenger-Cargo Ship

THE keel of the world's first commercial nuclear-powered ship, the passenger-cargo vessel *Savannah*, will be laid at Camden, New Jersey, on May 22, U.S. National Maritime Day commemorating the first crossing of the Atlantic by a steamship, the s.s. *Savannah*, in 1819. The new *Savannah* will be 595 ft. long, 78 ft. wide and capable of carrying more than 60 passengers and 9,500 tons of cargo. She will have a speed of just over 20 knots and will be able to operate without refuelling for more than three years, powered by a reactor of the pressurised water type of advanced design, and will cost about £11 million.

## Fire Protection in Boiler Flat

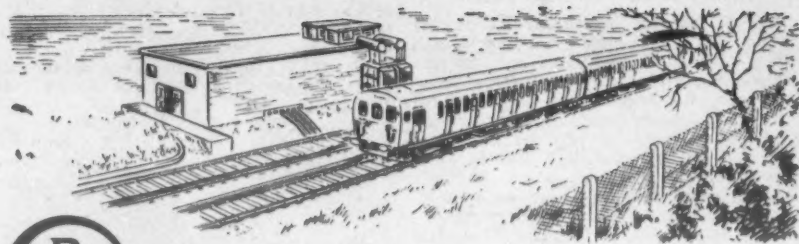
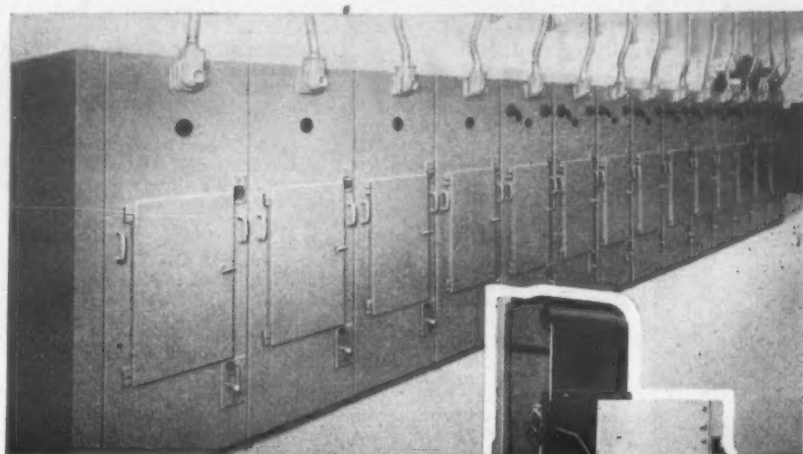
ONE of the new Port Line motorships, the *Port Invercargill*, has recently been fitted at Belfast with a Pyrene mechanical foam fire extinguishing installation for protecting the vessel's boiler flat. This installation is of the pressurised self-contained type and is therefore entirely independent of the ship's motive power. The mixture of water and foam-making compound is permanently stored in a 250-gal. tank, from which it is discharged by pressure from CO<sub>2</sub> cylinders. When the system is operated the mixture is conveyed by piping to four foam-makers located in suitable positions in the boiler flat, from which pipes feed a total of 10 foam spreaders fitted underneath the floorplates to cover the boiler-flat area with at least a 6-in. carpet of foam. The *Port Invercargill*, an 8,850-ton motorship, built by Harland and Wolff, Limited, in Belfast, was handed over to her owners at the end of last month.

## BY BRITANNIA TO CHICAGO

(Continued from page 12)

routes does tend to make the tail whip a little on occasions but this is certainly not noticeable and may perhaps be said, entirely without vanity, to be one of those things for which the aviation correspondent may look but which are not apparent to most air travellers. The engine noise was certainly less than that of any large piston-engined type in which we have flown and the inevitable advantage of the gas turbine in the reduction of vibration was also very apparent.

The styling of B.O.A.C. aircraft as exemplified by these new machines represents, we feel, a marked advance upon the now outmoded blues, greys and dark browns, and the cabins are much brighter in consequence. As already mentioned, the London—Montreal—Detroit—Chicago service will have increased to daily by the end of this month and on May 6 this type will take over from DC7Cs on the London—New York—San Francisco service. Competition between London and the Pacific coast is considerable and, of course, includes the transarctic routes of Pan American and Trans World Airlines, but the comfort of the Britannias should place B.O.A.C. in a good competitive position.

Electric Equipment  
for British Railways

BTH HIGH-SPEED CIRCUIT-BREAKERS installed at Hither Green substation.

In the D.C. network associated with the Southern Region change of frequency scheme, seven-hundred-and-eighteen of these units—for rectifier, feeder, and paralleling duties—are being installed in over eighty rail-side substations and paralleling huts.

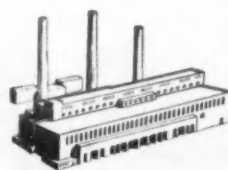
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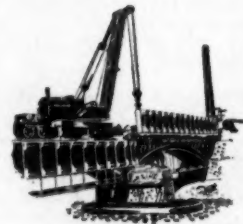
## A need is met

by

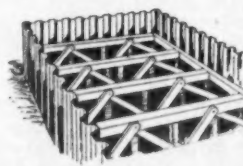


**POWER STATIONS** Cleveland have played their part in meeting Britain's need for more electrical energy. The huge steel frames have been fabricated at top speed with highly developed welding techniques. Members are produced up to 95 ft. long and 42 tons in weight, with a tolerance in length, twist or bow not exceeding  $\frac{1}{8}$  inch.

## CLEVELAND



**RAILWAYS** Movement of merchandise and people becomes yearly a greater task. Cleveland are helping not only with the construction of new bridges, but the re-construction and repair of old bridges.



**DEEP FOUNDATIONS** Necessity and not the ease of engineering dictates where many structures must be sited. So deep foundations are needed. Cleveland have wide experience all over the world and can be relied on to appreciate difficulties and find sound solutions.

As new needs occur, so new problems arise. Cleveland welcomes the chance of assisting in their solution. Excellent facilities are available for design, detailing, fabrication and construction.

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